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This series of six related studies reports the work of a multi-university team in developing and evaluating extensive taxonomies of organizational behavior in education. The report is divided into seven chapters, four of which describe the development of classification schemata, utilizing the concepts of four theories of organization and administration--decision-making theory, bureaucratic theory, compliance theory, and general systems theory. Chapters on taxonomic inquiry and on field procedures used in the development of the taxonomies are followed by an explanation of attempts to systematize the taxonomies into a single classification (Authors/JK)

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Developing Taxonomies of Organizational Behavior in Education

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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DEVELOPING TAXONOMIES OF ORGANIZATIONAL BEHAVIOR IN EDUCATION

Edited by

Daniel E. Griffiths

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CHAPTER I

by Paul Cullinan

PROCESSES AND PROBLEMS IN TAXONOMIC STUDIES

An attempt to classify and order concepts about organizational behavior in education may look to taxonomic efforts in several sciences for processes and direction. But the adoption of such models means that the problems and issues associated with them are also inherited. Nevertheless, taxonomic inquiry is a _sine qua non_ if knowledge and theory development of organizational behavior in education is to progress. Griffiths has noted that

> Taxonomies have served useful purposes in practically all the sciences. In fact one could probably make a very good argument to support the contention that any science begins with a taxonomy.[1]

It is to the problems involved in such inquiry and the prospects of deriving new ways of classifying organizational behavior that this study is addressed. Research aimed at discerning relations is indispensable to scientific advance in the social sciences but often such research efforts are exploratory incursions into areas that are relatively unchartered.

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Katz notes that exploratory studies have three purposes: "to discover significant variables in the field situation, to discover relations among variables, and to lay a ground work for later, more systematic and rigorous testing of hypotheses."[2] Certainly, in this sense, the work undertaken here is exploratory in nature.

Taxonomic processes

In developing taxonomies of organizational behavior in education, the major operations involved broadly parallel those employed in the physical and biological sciences. However, the problems related to classification of behavioral rather than physical phenomena are certainly distinctive. As a framework for discussing these distinct problems, as well as the perennial issues of taxonomic studies, the functions, procedures and their purposes of the TOBE approach are outlined in Table 1. Although the sequence of operations indicates a logical order of development, the relative independence of the first and second set of functions permitted them to be undertaken simultaneously. In subsequent chapters more complete description of each of these operational phases will be given.

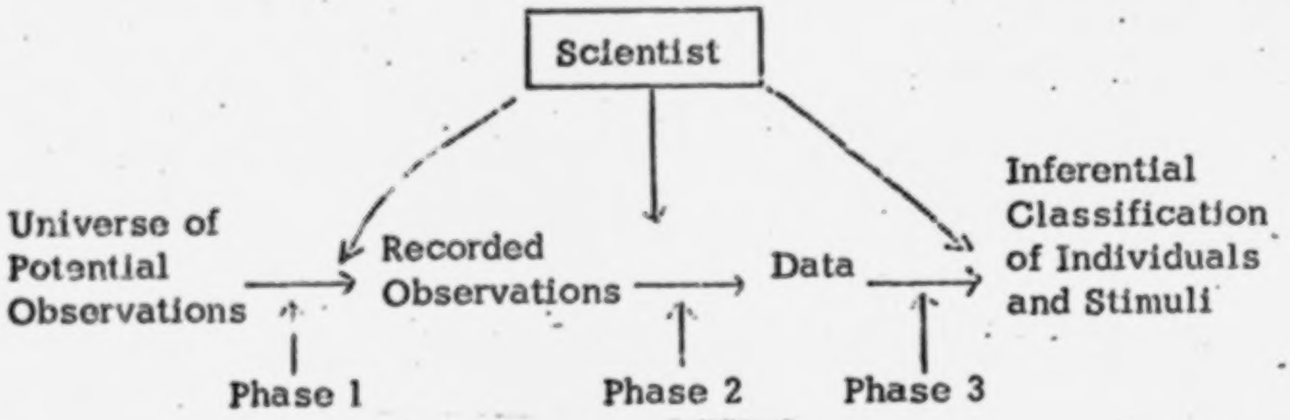
But it is first necessary to consider general problems associated with the major functions as they pertain to the approach used in the overall plan of this study. Thus, classifications and taxonomies deal only with aggregations of entities or units being

TABLE 1. THE FUNCTIONS OF TAXONOMIC INQUIRY INTO ORGANIZATIONAL BEHAVIOR IN EDUCATION

Functions	Procedures	Purposes
Observing and Recording	Selecting representative field of study Devising methods of observation Determining criteria for unit of behavior Preparing transcripts of observations	Depict organizational behavior in education Discriminate patterns of behavior Identify operational units Record tractable specimens
Formulating Conceptual Schemata	Stating propositions in terms of organizational behavior in education Indicating categories of observational predictiveness Stating parameters of categories of scheme Assigning characteristics to observational protocols	Explicate conceptual frameworks Operationally specify classes Characterize classes of observables Apply scheme to recorded specimens
Classifying Behavior Units	Preparing frequency distribution charts Checking frequencies versus proposed categories Analyzing by various statistical methods Indicating coefficients of association	Compare and contrast analyzed specimens Corroborate theoretical referents Examine degrees of affinity Synthesize relationships
Developing Taxonomies	Arranging similarity matrices Applying techniques of cluster analysis Using criteria of rank ordering Modifying categories; initiating new study	Construct classes from data Evaluate polythetic features of divisions Assemble various taxonomic groups Refine and test revised schemata

studied. And in the behavior sciences there are various viewpoints about the constitution of units for analysis and classification. For this reason some preliminary consideration must be given to the issues related to observing and recording behavioral units although "The Field Study" chapter will give detailed treatment to the methods employed in this project.

Observation, classification, and conceptualization are integrally related and for subsequent clarity some attention must be here given to their fundamental relationships. These relationships are indicated by the several phases through which a classification process is carried out. This process has been viewed by Coombs as illustrated in Figure 1.[3]


Scientist
Universe of Potential Observations
Recorded Observations
Data
Inferential Classification of Individuals and Stimuli
Phase 1
Phase 2
Phase 3

Flow diagram from the real world to inferences

According to this conception, the scientist must select some few things to record from the richness of the "real" world. However, these recorded observations from the first phase are not yet data in

Coombs' sense of "a theory of data;" an interpretive step on the part of the scientist is necessary for the conversion.

The second phase involves describing and labeling the recorded entities which are roughly grouped in terms of a relation of some kind between individuals and stimuli or perhaps just between stimuli. (In the TOBE study this grouping on the basis of relationships between individuals and stimuli follows the criteria set down for OTU's described in the following chapter.)

> Then, given this prior classification, phase 3 involves the detection of relations, order, and structure which follow as a logical consequence of the data and the *model used for analysis*.
>
> The scientist enters each of these three phases in a creative way in the sense that alternatives are open to him and his decisions will determine in a significant way the results that will be obtained from the analysis.[4] (Italics added)

It is at the juncture of observation and recording in phase 1 that the first basic question in classification studies is met. As Coombs has commented "the observations may frequently be interpreted as one of two or more different kinds of data."[5] What the observer chooses to notice and record is an optional decision but the choices made and the protocols used have fundamental implications for what happens thereafter in the study.

There are two principal methodologies from which a recording technique may be chosen for this initial phase of research. One is the so-called "primary record" approach which seeks to preserve as much of the observed activity as possible through written records, video or audio tapings, or combinations of these. The recorded observations are then submitted for analysis according to suitable schemes or models.

A second set of methods involves observation through predefined categories or codification schemes. Medley and Mitzels review numerous classroom behavior studies that have been based on such systematic observation schemes.[6] By way of extreme examples, they cite one study in which the observer tallied only the times the teacher smiled during the period of observation; they note another investigation which recorded pupil use of handkerchiefs when sneezing in English classes.[7] Units of behavior, observed through codification schemes are usually determined by either event sampling or time sampling procedures. Event sampling notes the number of occurrences of a selected behavior, such as smiling, during the total observation; time sampling uses systematic or random periods of time to record behavioral occurrences.

Beyond the many economies of observation methods which codify through predefined categories there are benefits of definitional accuracy and ease of data analysis. But the fundamental questions to be raised about these methods concern the initial conceptualizations for defining the categories of what is to be observed. It is around these questions that controversies of defining and dividing behavioral phenomena ensue.

Use of the "primary record" method tends to be less frequent in the classification of behavior although some modified forms of this approach have been used in systematic classroom observation. Despite its economic constraints it has certain advantages especially for exploratory investigations and for studies using multiple modes of analysis. Extensive research using "comprehensive behavior" observation and recording techniques of the primary record type has been done by Roger Barker and his associates.[8] Barker has emphasized the differences between conventional psychological research studies and what he calls "Ecological Psychology."[9] Certain parallels between his concepts of behavioral settings and behavioral units and the approach used in the TOBE study warrant further consideration of his work at the Midwest Psychological Field Station of the University of Kansas.

Behavioral ecology

Barker contends that the identification and description of the natural entities or events of a science in their relevant context or environment and the incorporation of these into a unified system of concepts constitutes the ecological side of science. The relevant context for human behavior must take into account the physical-biosocial world (the nonpsychological milieu) in which a person is immersed. In this way we can understand how it is transformed into a psychological environment for determining what behavior shall and shall not be possible for all who live within it. Hence, it is essential that we study behavior in situ in order to identify the environmental as well as the personality variables associated with behavior.[10]

Barker suggests that certain methods of psychology (such as some clinical techniques) tend to disrupt the continuity of behavior although they are thought to be analytical and noninterfering observational methods. Their use of time intervals and number-of-occurrences is artificial. The ecological approach, on the other hand, is "natural" in the sense that behavioral units occur without intervention by the investigator and are not disruptive of the "stream of behavior."[11]

Barker and his associates employ a verbal-narrative method of observing and recording which they contend has many advantages as a system for preserving the stream of behavior phenomena on the level of molar behavioral units.

> Like museums and like other archives, its objective is to present its "specimens" with only such modifications as may be required to preserve them and to increase their usability. The data of the publication are related to the original behavior much as a pressed and mounted plant in an herbarium is related to the living plant, or a stained and mounted section of tissue to living tissue. . .. .[12]

A tremendous amount of time has been spent in sustained observation by this group, and the records of observation so produced have been submitted to various modes of analysis. This, of course, was included in the rationale for such an approach.

> Derivative advantages include making it possible for different persons to approach identical phenomena at different times with different methodologies and within different contexts, of reducing field work where the materials in the archives are adequate for particular problems, and of providing the primary evidence upon which

published summaries and conclusions can be based.[13]

These "derivative advantages" of reducing field work and allowing several people to approach the same recorded phenomena through different frames-of-reference were also considered advantageous for the strategy adopted by the TOBE Project.

Moreover, there are other features of "behavioral ecology" for which comparisons may be found in the rationale of the TOBE study. These include 1) consideration of the behavioral setting, 2) discrimination of general patterns of behavior, and 3) criteria important in identifying operational units.

1. *The behavioral setting.* According to Barker and Wright[14] a behavior setting always has two sides. On the one side, there is always a part of the nonpsychological milieu, which may be physical, social, or both, as in the respective instances of a doctor's office or a vacant lot, a traffic law or a social clique, and a writ of *habeas corpus* or a school classroom. On the other side, there is always a social norm or a shared frame of reference that defines the setting as one which is appropriate for particular kinds of behavior. In the Field Study of the TOBE Project sufficient background material was provided with the recorded observations to permit the taxonomists to take into account the relevant characteristics of the setting within which the behavior occurred. Subsequent chapters illustrate this point.

2. *Discrimination of patterns*. Lewin has noted that "the first prerequisite of a successful observation in any science is a definite understanding about *what size of unit* one is going to observe at a given time."[15] He points out that in social psychology we have often misinterpreted the scientific requirements of analysis and have tried to observe as small units as possible and, in so doing, we have frequently torn the observed units from their context.

> The fallacy in such an approach is that there is frequently no way to distinguish among different possibilities of classifying an action if the observation lasts only a few seconds. Thus, if two persons A and B are running one behind the other, it may mean that either A is leading B or that B is chasing A. Only by observation which is sufficiently comprehensive to include both A and B and to extend through a period sufficiently long does the meaning of the activity become clear.[16]

Consequent to the resolution of this latter question is the problem of different observers reliably identifying the "same" units of behavior. Training observers can produce high levels of agreement for dividing the behavior stream into units or episodes.[17] However, systematic agreement in unit selection among untrained observers confronts the antecedent question of the "natural pattern" of perceived behavioral episodes. Dickman's investigation of this problem concludes that

> Behavior attains orderliness in the eyes of observers to the extent that goals and motives are imputed to the behavior. Independent observers of such a behavior continuum demonstrated significant agreement on general patterning and specifically on the points at which units began or ended. . . . These untrained observers agreed very poorly on identical incidence of units, yet they were able to agree on the general meaning of the sequence. This latter paradox is understood in terms of the differences in the inclusiveness of the goal or behavior perspective.[18]

Such conclusions are supportive of the approach adopted in the present inquiry into organizational behavior in education. That is, the field observers in this study recorded units of behavior which followed a general pattern; these observers indicated beginning and ending points as well as a general meaning of the sequence. However, subsequent classification proceeded from different conceptual frameworks, i.e., the "goals or behavior perspectives" were imposed by taxonomists according to the theoretical conceptualizations they had adapted for this purpose.

3. Criteria for operational units. Even granting the contingency of uniformly discriminating general patterns of behavior, there remains the problem of operational criteria for recording observed behavioral units. Among several unit methods proposed by the Barker team are the "Environmental Force Unit"[19] and the Social Contact Unit,[20] This latter unit Dyck specifies "as a unit of social interaction which contains within its boundaries (1) one subject, (2) one agent, (3) one raison d' etre, and (4) one continuous topic."[21]

The operational usefulness of this unit, including data on reliability is presented by Dyck.[22] Moreover, its specifications are similar to the Operational Taxonomic Unit (OTU) employed by the observation team of the present study as presented in the Field Study chapter.

The issue of behavioral units

Some of the problems associated with observing and recording units of behavior have been pointed out in these preceding sections. The advantages of selecting an approach from either set of methods are attended by various conceptual or procedural difficulties. The problem of units of behavior remains an unsettled one, and as Kerlinger observes

> One can attempt to define behavior quite operationally by listing a large number of behavioral acts, and can thus ordinarily obtain a high degree of precision and reliability. Yet in so doing one may also have so reduced the behavior that it no longer bears much resemblance to the behavior one intended to observe. Thus validity has been lost.[23]

Conversely, observation that seeks to record behavior more comprehensively permits certain vagueness and ambiguity of the observers' perceptions to decrease reliability. Training of observers can eliminate some of the ambiguity but the problem remains and must be recognized. The approach adopted in the present study has attempted to maximize the validity of observed and recorded specimens of organizational behavior in education. Such a position does not avoid the problems of _classifying_ behavior, it merely delays them. These problems are taken up in the following sections.

Bases for classification

Systematic observation of behavior using predefined categories implies a prior solution to the problem of how classes shall be formed. Hence, through whatever conceptual scheme is chosen, successive operations are guided in recording, grouping, and analyzing the units of behavior. On the other hand, the decision to use "primary records" techniques involves the application of classificatory methods after the behavior has been recorded. Yet once again, there are differences in the advocated procedures for this phase of developing classifications. As mentioned previously, the TOBE Project adopted a method whereby several conceptual frameworks were applied to the same recorded field observations. The rationale for this approach will be treated more fully in the next section of this chapter. But other procedures for developing classes have their proponents. For example, Schoggen asserts that an "atheoretical" position permits the emergence of more meaningful empirical groupings.

> Our aim here was to let the data guide us in establishing meaningfully distinct groupings rather than to impose some arbitrary system of classification on the data.[24]

Although Schoggen's work may be relatively less theoretically-oriented than other studies it is at least implicitly guided by some theoretical conceptions. In the same sense that Hanson maintains that even observations are "theory-laden,"[25] the classification of behavior can never be truly "atheoretical."

The issues of theoretical versus empirical approaches to classification are not unique to the behavioral sciences but have a long tradition in the biological and physical sciences. Some of these issues are examined in the following section in order to illustrate the basic problems underlying the development of taxonomies of organizational behavior in education and the processes employed in the TOBE Project. Before turning to these issues, however, some preliminary comments about the purpose of classification studies are in order.

The terms of any science result from a conceptualization of the subject-matter by which the things studied are classified and analyzed. Kaplan notes that "the function of scientific concepts is to mark the categories which will tell us more about our subject-matter than any other categorical sets.[26]

Hence, classification usually proceeds by grouping together entities according to some system of relationships or associations among them. It is the way in which these relationships or associations are conceived that forms the conceptual boundaries of the categories of the system. And, the factors that influence how relationships among phenomena are conceived lie in the purposes and kinds of generalizations that are ultimately envisioned.

According to Simpson,[27] the purposes and intended generalizations provide the bases for classification.

1. A major function of classification is to construct classes about which generalizations can be made.

2. Classes are constructed in connection with a particular purpose which depends upon the kind of generalizations that are considered pertinent.

3. Some classifications pertain to a wider range of phenomena and permit more meaningful generalizations than others and are in that sense more useful, or more powerful.

4. There is not an ideal or absolute scheme of classification for any particular field of phenomena but there are always a number of classifications possible. These will differ according to the purposes for which they have been constructed.

5. Even classifications in the same form, with the same purposes, and based on the same criteria or principles are not unique or uniform.[28]

Although classifications are founded upon relationships among phenomena it is possible to have relationships of innumerable different kinds. It would seem to follow, therefore, that there may be many different classifications as well as many different bases for classification of the same phenomenal field. Krathwohl and others suggest that this difficulty is inherent to classification:

> We should note that any classification scheme represents an attempt to abstract and order phenomena and as such probably does some violence to the phenomena as commonly observed in natural settings. The value of these attempts to abstract and classify is in their greater power for organizing and controlling the phenomena.[29]

The "power" of a classification whether seen in terms of organizing and controlling phenomena or in terms of information yield is the quality by which "naturalness" is predicated of a classification. As Kaplan observes

> Every classification serves some purpose or other. . . It is artificial when we cannot do more with it than we first intended. A natural

> grouping is one which allows the discovery of many more, and more important, resemblances than originally recognized.[30]

A classification whose purpose is restricted is usually referred to as a "special" or arbitrary one. Sokol and Sneath distinguish that

> Such a classification conveys less information than a general or "natural" one. For example, we can divide mammals into carnivores and herbivores for the purpose of ecology; then the designation "carnivore" only tells us the kind of food they eat.[31]

They add that

> A natural classification is a "general arrangement intended for general use by all scientists"[32]

The inductive approach

Even granting substantial agreement on the purposes for classification, there are disparate views of how these purposes are better achieved. On one hand there is the school of thought which espouses the empirical approach through inductive and numerical methods. Opposed to this is the theoretical school which advocates a more classical or deductive position. While the controversy is manifested chiefly among biological taxonomists the implications are similar for classification in every field.

The procedures advanced by the strict empiricist school are quite simple; viz., observe and record as many characteristics as possible and then form classes according to a majority of shared characteristics. Hence, a species is constituted of individuals with a maximum number of shared characteristics, while a genus consists of those species with a maximum number of shared characteristics, etc.

The advent of high-speed computers has given new impetus to this approach and such methods of numerical taxonomy are considerably detailed by Sokol and Sneath who state these basic principles:

> 1. The ideal taxonomy is that in which the taxa have the greatest content of information and which is based on as many characters as possible.
>
> 2. A priori, every character is of equal weight in creating natural taxa.
>
> 3. Overall similarity (or affinity) between any two entities is a function of the similarity of the many characters in which they are being compared.

4. Distinct taxa can be constructed because of diverse character correlations in the groups under study.

5. Taxonomy as conceived by us is therefore a strictly empirical science.

6. Affinity is estimated independently of phylogenetic considerations.[33]

The rejection of phylogenetic considerations implies opposition to the use of traditional theory in biological taxonomy. Carried to its logical extreme this position would assert that more "natural" taxonomies can be developed through stringently empirical procedures, i.e., according to grouping by statistical correlation of observed characteristics. But here again, choices must be made about which initial characteristics shall be considered since some preliminary grouping is necessary for a starting point. Such choices are implicitly theoretical. Moreover, the correlational process tends to produce classifications of characteristics rather than of whole entities.

The most vulnerable tenets of the inductive approach are, first, that characteristics are tabulated according to theoretical formulations that are not explicit and second, that classes are formed solely on the basis of inductive logic (applied probability theory). These tenets are rooted in an inadequate view of the nature and formulation of classes.

The nature and formulation of classes

What is proposed here as being a more adequate view of the nature of classes rests chiefly on three propositions:

1. Classes are theoretical entities explicated by categorical logic.

2. Classes are empirically checked and modified by statistical methods.

3. Classes are operationally specified although not operationally defined.[34]

The first of these propositions asserts that classes are properly formulated through explicit conceptualizations; the second emphasizes that statistical procedures are necessary but not sufficient guides for developing classes; and the third statement denotes the nature of the bridging operations for making theoretical categories tractable to empirical checking.

For the first proposition, the issues are basically centered on the radical idea of classes. That is, whether classes are natural entities waiting there in "nature" to be discovered or whether classes are man-made formulations. If the supposed logic of induction is followed one notes characteristics and their occurrences and then infers generalizations (for arriving at classes) from this process. Most efforts are thereby devoted to improving observation and correlation techniques to the neglect of theoretical formulations. Yet observation and correlation are made in terms of at least implicit theoretical frames-of-reference; theories that are not explicit suffer the shortcomings of not being scientifically delimited. A theory that is not explicated is a poor theory and poor theories lead to poor classifications. For example, one could not begin to develop social classifications based on characteristics of unemployment and delinquency without explicit concepts about what constitutes unemployment (economic theory) and delinquency (social behavior theory). Or again, a characteristic such as color indicates differences of structure and function in algae but not in mushrooms (or humans). In these instances to include color equally among the characteristics for making classes implies certain hypotheses about the data. Characterization is the product of an active theoretical choice, not merely passive reception of what is "out there." To the extent that theories determine data our theories need to be explicitly stated for marking off what is to be observed and characterized.

Although it is necessary to view classes as theoretical entities explicated by categorical logic, it is not sufficient to do so. To assume that classes can be formulated solely in terms of categorical logic whereby "clean-cut" classes are deduced is to err at the other extreme. The deduction of classes so that the phenomena to be classified fall into one and only one class is to rely on theory alone for delineating classifications. In that case, science would be merely the formal way of carrying out theoretical deduction of classes which would complete the inquiry. Theoretical categories that are not empirically corroborated become matters of sheer speculation. Thus, classes are formulated not by ideational structures (theory) only but by theoretical categories whose probabilities are tested through empirical instances.

The second proposition stated earlier contrasts the strictly inductive approach with the position taken in this study, viz., that classes are checked out empirically--and modifications are made in the original theoretical categories on the basis of these experiences. Statistical methods are employed to assess the strength of possible generalizations (distribution of samples, populations, etc.) and to analyze the range of similarities among the phenomena being studied (correlational and factorial techniques). In fact, classes are necessarily statistical in nature since the phenomena being investigated can rarely be characterized directly and in a complete universe. But, contrary to the numerical taxonomists, statistical procedures are not sufficient for the development of classes.

The third proposition distinguishes operational specification from operational definition as an adequate view about formulating classes. This proposition warrants closer examination not only because of the distinction between operational "definition" and "specification" but, especially because of the import it holds for the major function in the TOBE study of "formulating conceptual schemata."

Specification and conceptual schemes

The issue of operational definition versus operation specification of classes is more than a mere semantic distinction; it represents a radical demarcation between positions held about the philosophy of science. Without becoming deeply embroiled in the polemics of this question a rationale for operational specification will be outlined below. Although there is a certain "matter of degree" tolerable here, classes are concepts that can only, in principle, be operationally specified and not operationally defined.

Classes, it has been noted, are theoretical entities that are formulated for purposes of grouping observations. Since they are to distinguish what is to be observed they cannot be constructed or defined in terms of observational techniques. For example, in psychiatric studies classes of personality disorders such as "paranoid," "cycloid," etc., are theoretical formulations. But, delusions of persecution, hearing voices, and associated functional disorders do not mark off one behavior disorder from another. Rather, the theoretical formulation allows specification in terms of symptoms, much as Freud's classes of disorders in terms of inborn forces, environmental influences, and the means of mental adjustment between them permit the specification of what behavioral aberrations might be observed. The operations do not define the classes, then, but the theoretical "definition of terms" contains the distinctions between variables which must be then checked out empirically.

What the preceding implies, of course, is a negation of strict definition in the sense of operationism without denying the necessity of assigning conditions of meaning to theoretical terms. Kaplan asserts that

> This term [definition] has a loose sense in which it applies to any procedure for specifying

> meaning . . . theoretical terms--and in practice, most constructs--are not capable of definition in the strict sense. . . . I must emphasize that I am not saying that such terms cannot or do not have their meanings specified; I am saying only that, because of the openness of their meaning, the specification is not by way of definition in the strict sense.[35]

The theoretical formulations used in the "conceptual schemata" of the TOBE Project generate classes that are operationally specified yet not operationally defined in the strict sense. However, in the sense of "open" or successive definition each of the major terms in the four conceptual schemata are assigned meaning through "definition of terms." Moreover, these terms are categorically subdivided and specified to provide referents for the phenomena recorded in the observations.

Nevertheless, the conceptual schemata are derived from theoretical formulations and theoretical terms cannot, in principle, be fully defined by observables. These terms possess a systemic quality that binds them together in such a fashion that the content of a single concept cannot be fixed apart from the meaning of the whole theory. Thus terms like "negentropy," or "castration complex" are devoid of meaning when dissociated from their theoretical contexts.

The bridge from theoretical terms to empirical data can and must, of course, be made. Hypothesized categories are confirmable (or contrariwise) through instances of observations. To illustrate the procedures and purposes of what Table 1 encompasses under the function of Formulating Conceptual Schemata consider the following example.

Suppose a series of propositions concerning the influences on eye coloring were formulated to explain inherited variations of dominant-recessive colors (as in fact, is the case). The terms of such a conceptual framework would operationally specify the classes of constructs for dominant (BB, Bb) and recessive (bb) factors along with postulations about their observational predictiveness. These classes (Bb, etc.) characterize the gene pairings that are the indirect or genotypic observables to be empirically checked out. The application of this scheme to recorded observations on eye coloration (phenotypes) would provide the empirical corroboration of a genetic theory of eye-coloration.

In effect, this illustration indicates the sequence of procedures through which theoretical terms--sometimes called explanatory terms or hypothetical constructs--are made operationally useful by deriving intervening variables or constructs that may be applied to the world of observables. The observations do not, of course, give meaning to the theoretical terms but only mark the occasion for their application. In the present study terms such as "compliance" or "incentives" are theoretical concepts which constitute explanations about certain aspects of organizational behavior in education. Through sub-categories of these terms postulations are made about the observational predictiveness of various kinds of organizational behavior. The characteristics of these subcategories are then checked against the recorded specimens (observational protocols) to test the applicability of the conceptual scheme to empirical instances of organizational behavior in education.

In summary, what has been said about the bridging between theoretical terms and empirical instances is meant to emphasize the procedure of operationally specifying classes. The systemic property of a theoretical term demands some openness of meanings since the theory as a whole is needed to give full meaning to its terms. Again, Abraham Kaplan states:

> Notice that a term may have systemic meaning even though it is apparently explicitly defined somewhere. . . The chances are, indeed that a key term of this kind is "defined"

> several times and in several different ways. This diversity does not necessarily mark a lapse either of logic or of memory, but the occurrence, rather of systemic meaning.[36]

Classifying behavior units

The function of placing units of observed organizational behavior (OTU's) follows the procedures outlined in Table 1. The methods employed in this phase of the study are described in the respective chapters of the four conceptual schemata formulated for purposes of classifying these behaviors. The statistical treatment of the data was made according to a computer program expressly written for showing degrees of the OTU's affinities across the various categories of the classification schemes. The interpretations of these analyses are described in the individual chapters dealing with each scheme.

Classification and taxonomy

The terms "taxonomy" and "classification" have been used frequently in the considerations that preceded and that will follow. Definitionally they may be distinguished as follows:

> Classification is the ordering of phenomena into groups (or sets) on the basis of their relationships, that is, of association by contiguity, similarity, or both.

> Taxonomy is the theoretical study of classification, including its bases, principles, procedures, and rules.[37]

This distinction can be further highlighted by paraphrasing Gregg[38] in stating that the subjects of classification are the phenomena and the subjects of taxonomy are classifications. This use of the word "taxonomy" is more restrictive than others but in the present context is more fitting.

Classification usually proceeds by grouping together individual objects or concepts by some system of relationships or associations among them. But scientific classification also needs different levels of generality for inclusion of groups. This may be accomplished in either of two ways: (1) by overlapping or coincidence of non-identical classes; chemistry, for example, deals with classes that do not admit of subordination, or (2) by subordination of some classes to others for inclusion of the former in the latter as found in the biological sciences.

Classification by subordination may continue for a large number of levels or steps usually termed a hierarchy. A hierarchy is a systematic framework with a sequence of classes (or sets) at different levels in which each class (except the lowest) includes one or more subordinate classes.

An arrangement of phenomena into classes which, in turn, are hierarchically ordered forms a system of classes called "taxonomic categories" arranged in serial order. The operations then consist of the conceptual aggregation of phenomena into taxa of lowest rank and aggregating these lower ranked classes into taxonomic categories of successively higher rank. Regardless of how the grouping is performed, these operations involve two kinds of relationships. The first, a relationship of priority, is exemplified by the relationship between genus and species, i.e., a vertical or stepwise including-included arrangement; the second, a relationship of equivalence, is exemplified by the relationship between genus and genus within one family, i.e., a horizontal type of ordering.

Theoretical science is concerned with ordering and taxonomy is a branch of science that is exclusively and explicitly devoted to the ordering of complex phenomena. However, the ways of achieving this ordering differ and lead to misconceptions about the nature of the taxonomic process. Krathwohl, Bloom and Masia have stated this point quite insightfully:

> A true taxonomy is a set of classifications which are ordered and arranged on the basis of a single principle or on the basis of a

> consistent set of principles. Such a true taxonomy may be tested by determining whether it is in agreement with empirical evidence and whether the way in which the classifications are ordered corresponds to a real order among the relevant phenomena. The taxonomy must also be consistent with sound theoretical views in the field. Where it is inconsistent, a way should be developed of demonstrating or determining which alternative is the most adequate one. Finally, a true taxonomy should be of value in pointing to phenomena yet to be discovered.[39]

Developing taxonomies

With the preceding ideas in mind, it is possible to list some of the principal features of taxonomic inquiry:

1. Classes or aggregations of phenomena, not individuals, are the basic units of taxonomy and are the things to be classified. Classes of phenomena vary, for variation is an essential part of their nature and their definition, i.e., classes do not have single fixed patterns or types.

2. Observations of properties and characteristics are essential, but not definitive in taxonomic studies. Observations

and empirical checking provide evidence that the theoretical definition of class is met by a particular aggregation of phenomena.

3. Taxonomic studies are always statistical in nature. The objects of inquiry are classes of phenomena as they occur, and they can rarely be observed directly and in a complete universe. Procedures, therefore, must necessarily be by inference from statistical samples and classes are checked by means of statistical methods.

4. Classes at all levels of a taxonomy are not in principle defined by their membership but by their relationships. That is, classes cannot be defined solely by induction, viz., by specifying the individuals that belong to them or by listing the characteristics of those individuals but only by implicit or explicit specification of relationships among those individuals. Common characteristics and overall similarity do not have primary roles in classification. Characteristics in common are viewed as evidence of the theoretically derived relationships, which are primary.

5. The construction of formal classifications of particular groups is an essential part and a useful outcome of taxonomic effort. However, it is not the total nor even the controlling purpose. Rather, the aim of taxonomy is to understand the groupings and the relationships of phenomena in conceptual terms in

order to make generalizations and extend knowledge of the field being studied.

6. The guiding principles in developing classifications should be based on the most significant theoretical relationships among phenomena and include as many of these as possible.

A Synthe~~tic~~sis of Taxonomic Operations

The purpose of taxonomic inquiry is to obtain an arrangement or ordering of phenomena into a readily understandable classification system according to evidence supporting theoretical relationships. To achieve the best possible approximation to this organization, the process of inquiry depends upon theories, principles and procedures that are, strictly speaking, the "science" of taxonomy. Formulating and testing theories and applying these principles are the most basic things a taxonomist does. But he does them by means of a set of procedures such as outlined in Table 1 of this chapter.

Some of these procedures are more directly related than others to the principles outlined previously. With respect to taxonomic inquiry, the most critical steps in the series are those of synthesizing relationships, arranging similarity matrices, and applying techniques of cluster analysis. These three operations are concerned with the conceptual aggregation of phenomena into classes of lowest rank which affects all ordering that follows.

Secondary in importance are the operations of grouping these classes of lowest rank into successively higher rank, i.e., ordering classes from C_1 up to C_n. These latter operations involve the previously mentioned criteria of relationships, viz., equivalence and priority.

If the characteristics of relationships among classes can be associated with various taxonomic levels or ranks, the consequent operation of ordering is a relatively simple matter. Unfortunately, such _a priori_ determination of rank-associated characteristics is not the sole acceptable basis for hierarchical ordering even where there is some affinity between characteristics and taxonomic levels. Moreover, groups or aggregations of phenomena are classified, not their characteristics although characteristics are essential in defining and describing classes. However, the crucial activities of comparing, interpreting relationships, and making inferences are carried on more consistently through criteria based on theoretical formulations.

In light of the conceptual bases of taxonomic inquiry outlined earlier, as well as the purposes and procedures guiding classification, the following synthesis of a taxonomic mode of inquiry seems to be in order:

1. Purposes and criteria. The major purpose of taxonomic inquiry is to construct classes about which generalizations can be made. These classes are developed in accordance with a purpose by means of theories yielding classification systems for a certain range of phenomena. Although a number of classification schemes may be possible, one form of classification should be applied to all phenomena with which the taxonomy is concerned.

2. Conceptual bases. In taxonomic inquiry classifications are conceived as theoretical entities, operationally specified, explicable in terms of categorical logic and utilizing statistical methods.

3. Principles and procedures. Classes or aggregations of phenomena are the basic units of taxonomy. Taxonomic studies are always statistical in nature which provides evidence that theoretical specifications of classes are met. The classes at all levels of a taxonomy are defined by their relationships expressed in conceptual terms. The most significant relationships, consistent with theory, guide the development of classifications and hierarchical ordering.

The principles and procedures outlined here have served to guide the empirical processes of investigation of organizational behavior in education that follows. However, numerous problems occur no matter how tractable the phenomena are for taxonomic inquiry. Benson asserts that taxonomic conclusions are always tentative and the taxonomist may develop a better, more readily understandable explanation of the nature and status of taxa, but, he can only revise and improve, never complete, the taxonomic system. No matter how long he may search or how many experiments he may conduct, he still does not discover all that can be learned about the classification of any taxon. He must draw tentative conclusions from incomplete data or draw none at all. He is forever approaching the truth but he never reaches it in all particulars.[40]

Problems that need solution or evoke only tentative answers are inherent in the application of taxonomic processes in every field.

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CHAPTER II

THE FIELD STUDY

by

Frank W. Lutz

The need for field data:

The development of a taxonomy may begin with theory and move toward the development of schemata for classification and end with that classification. Or it can begin with the collection of specimens and then order the specimens empirically and attempt to develop a theoretical notion about the ordering. In either case the journey into the field to collect specimens or units that are to be classified and ordered is essential. Each of the approaches has its pitfalls. If one begins with theory he is predisposed toward what he collects. He is likely to accept this as a unit and reject that, based on whether the unit fits his particular theory. Such a practice is self confirming. On the other hand, moving entirely empirically, one may be left with an atheoretical system which will be of no use in predicting what has not been specifically observed. This project worked from both ends. While taxonomists developed schemata based on selected theories, a field study was conducted by separate personnel. The schemata were modified and tested with these field data.

As the job of field work emerged, it became obvious that it was a more complex task than originally thought. The existing literature was examined in a search for samples of behavior which were not confined to a particular framework, developed for a specific and limited purpose and detailed enough to be a complete specimen of behavior. A search revealed that the material the project needed was not available in the literature. This is not an indictment of the literature. Anthropological studies in education, as in other areas, should begin with theory and attempt to modify that theory as data are deviant, thus ending with a more sophisticated theory that accounts for the data. Thus the data "fits" a particular theory. Data which can be accounted for within a single theory would probably not prove satisfactory for classificatory purposes when attempting to develop a taxonomy derived on the basis of several theories.

Short case studies, as differentiated from anthropological studies, usually tell a particular story and arbitrarily leave out many samples of behavior which are of no interest to that specific case. Some are incomplete or deliberately fictionalized to stress a particular point. Again, this literature was not useful to the TOBE Project purpose.

It was necessary to go into the field in quest of "field samples" of organizational behavior. The task was complicated by the fact that no one had clearly described the parameters of a single sample or specimen of organizational behavior.[1] If we are classifying dinosaurs, we know where one animal begins and ends. From head to tail we have one dinosaur. But what about a specimen of organizational behavior? Where does one start and stop?

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[1] Others have found it difficult to define a unit of human behavior. While this presents difficulties similar to the one of defining a unit of organizational behavior, the work related to units of human interaction was helpful to us only as it assured us others had wrestled with the problem. See: Robert F. Boles, Interaction Process Analyses: A Method for the Study of Small Groups (Cambridge, Mass.: Addison-Wesley Press Inc., 1951) pp. 49-65.

Definition of an Organizational Taxonomic Unit (OTU)

After trial and error in the field, the research team decided that at least the following must be present in order for a particular "thing" to qualify as an OTU or unit of behavior: (1) the purpose of the behavior must be clearly definable; (2) there must be an identifiable central actor~~s~~; (3) there must be some history; (4) a description of what happened during the lapsed time must be included; and finally, (5) we must be able to state what happened as a result of the action. Further it was determined that the actual dialogue which occurred~~, at least in part,~~ should be included in some of the specimens in order to give the OTU or unit enough detail.

Stet ~~The above definition is logical and heuristic.~~ It is logical because it follows a logical procedure for organizational behavior. In order to behave, one has a need or purpose for behavior; these are individuals or actors; one considers the history of the behavior; something is done which can be described; and finally, something happens as a result of the behavior. This procedure of defining a unit proved useful in that it provided units which could be classified by all taxonomists. Other attempts to define units did not permit all taxonomists to classify each OTU. Thus, our ~~present definition~~ approach is heuristic. Such a procedure is not different from the procedure used in defining a specimen in biology. A case in point would be where one must decide whether to include one-celled specimens or require that one or more cells comprise a specimen. If the latter decision was made, one-celled bacteria and one-celled protozoa would defy classification. The definition of a unit must be logical and also heuristic. It must produce a unit which is capable of consistent classification within the taxonomy.

The sample of behavior:

The selection of OTUs from the total behavioral sequence in an educational organization could be arbitrary and not representative.

In order to avoid being arbitrary, the following atheoretical classificatory grid was developed and samples of organizational behavior in each cell were collected, examined, and then classified.

FIGURE I
ORGANIZATIONAL BEHAVIOR GRID

Administrative Level / Task	Business	Curriculum	Community	Personnel
Top (Superintendent or Board)	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1
Middle (Assistant Superintendent or Central Office)	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1
Lower (Principal or Assistant Principal)	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1	A = 3 B = 2 C = 1

Key: A - First public education units; B - Higher education units;
C - Second public education units

nA = 36 nB = 24 nC = 12 NT = 72

Note: Actually ninety OTUs were developed and classified. All of these appear in Appendix A.

A brief description of jobs which might be subsumed under the four categories is necessary to prevent confusion. ~~Narrowly interpreted, the task areas would leave much of administrative behavior unassigned to any category. This was not our intention.~~ For instance, the operation of closing school, storing textbooks, scrubbing the floors, etc., was placed under the task of business. Budgets, bonds, buildings and buses were all placed under the broadly interpreted category of business. Likewise, the categories of personnel, curriculum and community were broadly interpreted in order that all specimens of behavior could be placed in one or the other category. Such a procedure could have been disastrous for the development of the classificatory schemes used in the taxonomy. ~~It must be remembered that the four categories in Figure I were atheoretical and chosen because they had no direct relationship with the taxonomy itself.~~ The only usefulness of these categories was to make sure that there was some range of behavior represented in the OTUs selected by the field study personnel for classification by the taxonomists.

In each cell several OTUs were required. These are described in Figure I as Classes A, B, and C. Class A OTUs are samples of behavior from a public school district that were used to test the individual frameworks and revise them. Class B OTUs are samples of behavior collected in a university and used after a modification of frameworks. Class C OTUs are from the same district as Class A OTUs and were used to demonstrate the usefulness of the taxonomy in its final form. Thus, there were seventy-two required OTUs of organizational behavior, thirty-six in Class A, twenty-four in Class B, and twelve in Class C. It should be noted that a single specimen could often be classified in more than one cell. In order to get the seventy-two cell entries, it was not necessary to obtain seventy-two specimens of behavior. However, ninety separate OTUs were developed and classified. These have been placed in our Task-Administrative Level grid for the reader's edification.

FIGURE II
CHART OF OTUs INCLUDED IN APPENDIX A

Administrative Level Task	Business	Community	Curriculum	Personnel
Top (Superintendent or University Head)	5** 70** 9** 71**; 17 89 27 29 8	3 75** 6 77* 13 90 21 22 30 9	23 72** 26 76** 28 87 52* 7	2 48* 74** 4 49* 85 7 51 8**53* 16 73** 12✓
Middle (Central Office or Dean of a School	15 58* 19 88 20 32 54* 7	14 57* 34 84 36 47* 56* 7	24**83 33 35 55* 60* 6	1 86 18 25** 50* 59* 63* 7
Low (Principals or Head of a Department or Professor)	12** 61* 39 65* 42 78 45 7	10**69* 44 81 46 62* 6	11**79 37 66* 38 68* 41 7	31 67* 40 80 43 82 64* 7

*These OTUs are on film
**These OTUs are on tape
Underlining indicates OTUs from higher education

OTUs versus Total Behavior:

It is obvious that the OTUs alone might be insufficient for classification or specification of certain relationships. When classifying a dinosaur, it is helpful for the taxonomist to know whether or not it lived in the Mesozoic Era. Likewise, in the organization it may sometimes be necessary to determine the relationship between the single OTU and the entire or continuous behavior of the organization. For this reason a study encompassing observations over a seven month period was conducted in a public school district. OTUs from this total description of behavior were "mounted" (biological sense) in the form described. The background data were always available to the taxonomist.

In addition, some OTUs were accompanied by magnetic tapes or by sound motion picture film of the OTU. Thus, written narrative OTUs, supplemented by tapes or films, were available from a larger description of organizational behavior which itself was made up of descriptive cases. Perhaps some explanation of the difference between an OTU, a case and a total description of behavior would be useful to the reader.

~~Cases and~~ Units (OTUs):

The following definitions are essential to the understanding of cases and OTUs.

1. Central actor - the person within the organization upon whom the observation is focused.

2. Topic of behavior - the theme around which the observed behavior takes place.

FIGURE III
THE STRUCTURE OF ORGANIZATIONAL BEHAVIOR

Unit A1) Unit A2) Unit A3) Unit An)	Case A	)
Units B1-Bn	Case B	)
Units C1-Cn	Case C	) Total Description of Behavior
Units D1-Dn	Case D	)
Units N1-Nn	Case N	)

Figure III defines the relationship between units,cases and the total description of behavior of the organization over a comparatively long period of time (i.e., several months).

A unit is the occurrence of a topic of behavior in the life of a central actor. The unit begins when the topic is introduced and continues until that topic is terminated and another topic is introduced. Even though the same topic may be introduced again at a later time, the termination at a given point in time ends the unit. The unit is composed of the five characteristics discussed earlier in this chapter.[1]

Example: The principal is the central character. He is working at his desk as a teacher enters with a boy and informs the principal that the boy has torn the shirt of another boy in her class. (This introduces a unit.) All the behavior that is recorded until the principal dismisses the topic of the "torn shirt" is now included in the unit. The teacher may leave, the child may leave, a phone call may be placed; as long as the principal's activity is centered on the topic of the "torn shirt," the unit continues. Finally the principal may trun to another topic. Then the "torn shirt" unit ends and another unit begins.

We will illustrate the ending of the unit in two ways. The principal may reprimand the boy, send him home, and tell him to return with his mother. The principal may then buzz his secretary for dictation which is not concerned with the "torn shirt." Then a new unit begins.

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[1] It is possible for "mounting" purposes to indicate some interruption, such as a phone call not on the topic, and continue the same unit, thus getting to the outcome in order to complete the unit as required by definition.

Another method of ending the unit serves to illustrate that the unit does not center on the boy. The principal may reprimand the boy and explain that he will have to pay for the shirt. He may say that as a student council member, the boy should be ashamed of his action. The principal may then drop the topic of the "torn shirt" and discuss the school carnival with the boy. As he does this, a new unit begins. The unit is "topic" centered and "central actor" centered. It is not secondary actor centered. When the topic or the central actor changes, no longer appears in the observation, the unit changes. If the boy leaves the office with the teacher who continues to chide him as they go down the hall toward the classroom while the principal begins a task related to another topic, "the torn shirt" unit ends and a new unit begins. However, if the central actor of the observation was the teacher of the pupil, the unit would continue until that central actor behaved in terms of another topic stimulus.

A case refers to the initiation of a stimulus which requires the attention of the central actor of the observation and continues until actions are taken which include that topic for the entire description of behavior. Other "units" and/or actors may intervene but "the case" is not completed until it fails to appear again in the total description of behavior. A case may include several units which are linked by the specific topic but divided by intervals of time during which other units intervene. It is not always possible to distinguish a unit from a case at the moment of observation. It is necessary to observe at a later point in time to determine whether another unit related to the same topic takes place. On the other hand, in our example of a unit we noted that the principal might terminate the unit by sending the boy home and instructing him to return with one of his parents. We are, therefore, made aware that we have seen only one unit in a series of at least two units which will comprise a case. Such cases, continuing over varying periods of time, comprise the total description of behavior.

Example: Units #1-14 (4/2/65) have been recorded.

Unit #15 - 4/2/65

1. Boy is brought in by teacher for tearing shirt.
2. Principal reprimands.
3. Principal sends boy home to return with parent.

Unit #16 - 4/2/65

1. Phone call about principals' meeting.

Unit #17...Unit #n - 4/2/65

Unit #1 - 4/5/65

1. Principal walks into office at 8:30 a.m.
2. Mother and son are waiting and principal shows them into his office.
3. Discussion takes place.
    a) Boy to stay in school.
    b) Mother says she won't pay for shirt and her lawyer will call in afternoon.
4. Mother and boy leave.

Unit #2...10

Unit #11

1. Secretary buzzes with call from lawyer.
2. Discussion.
3. Decide to allow boy to pay 50¢ from allowance but not entire cost.

Unit #12...16

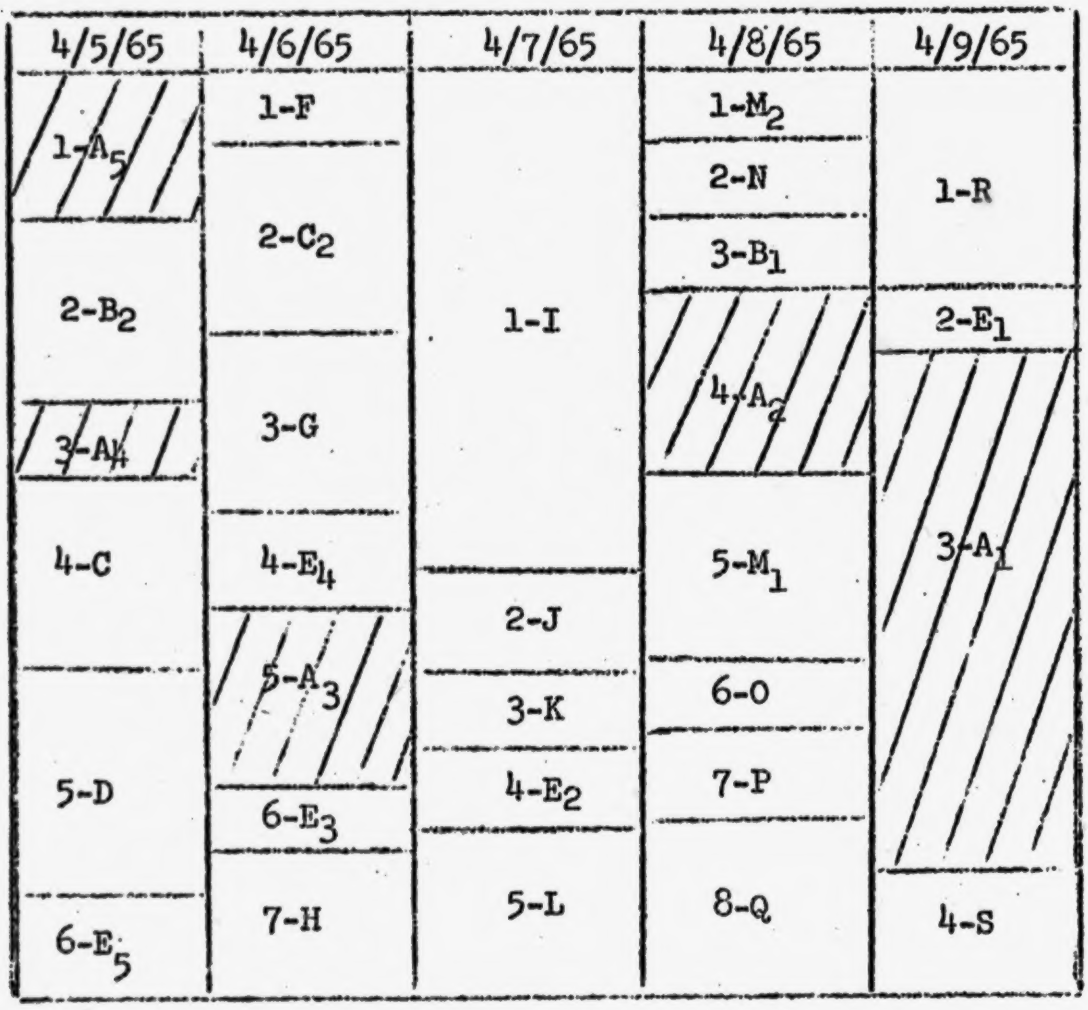
Unit #17

1. Principal dictates letter to parents of boy outlining agreement with a copy to the lawyer.

In this series, unit #15 - 4/2/65 and units #1, 11 and 17 - 4/5/65 comprise a case. At this point we are not sure the case has ended but we have no data which indicates it will continue. If no other unit in the total description of behavior is related to the topic of the torn shirt clearly enough so that no inference on the part of the observer is necessary to make the relationship, then the case is complete.

Figure IV illustrates the recording of behavior of a single actor in terms of units and cases.

FIGURE IV
THE RELATIONSHIP OF EVENTS, CASES AND ONE WEEK'S BEHAVIOR
Days



4/5/65	4/6/65	4/7/65	4/8/65	4/9/65
1-A_5	1-F	1-I	1-M_2	1-R
2-B_2	2-C_2	2-J	2-N	2-E_1
3-A_4	3-G	3-K	3-B_1	3-A_1
4-C	4-E_4	4-E_2	4-A_2	4-S
5-D	5-A_3	5-L	5-M_1	
6-E_5	6-E_3		6-O	
	7-H		7-P	
			8-Q	

Note: Arabic number indicates unit number by days.

Letter indicates case reference.

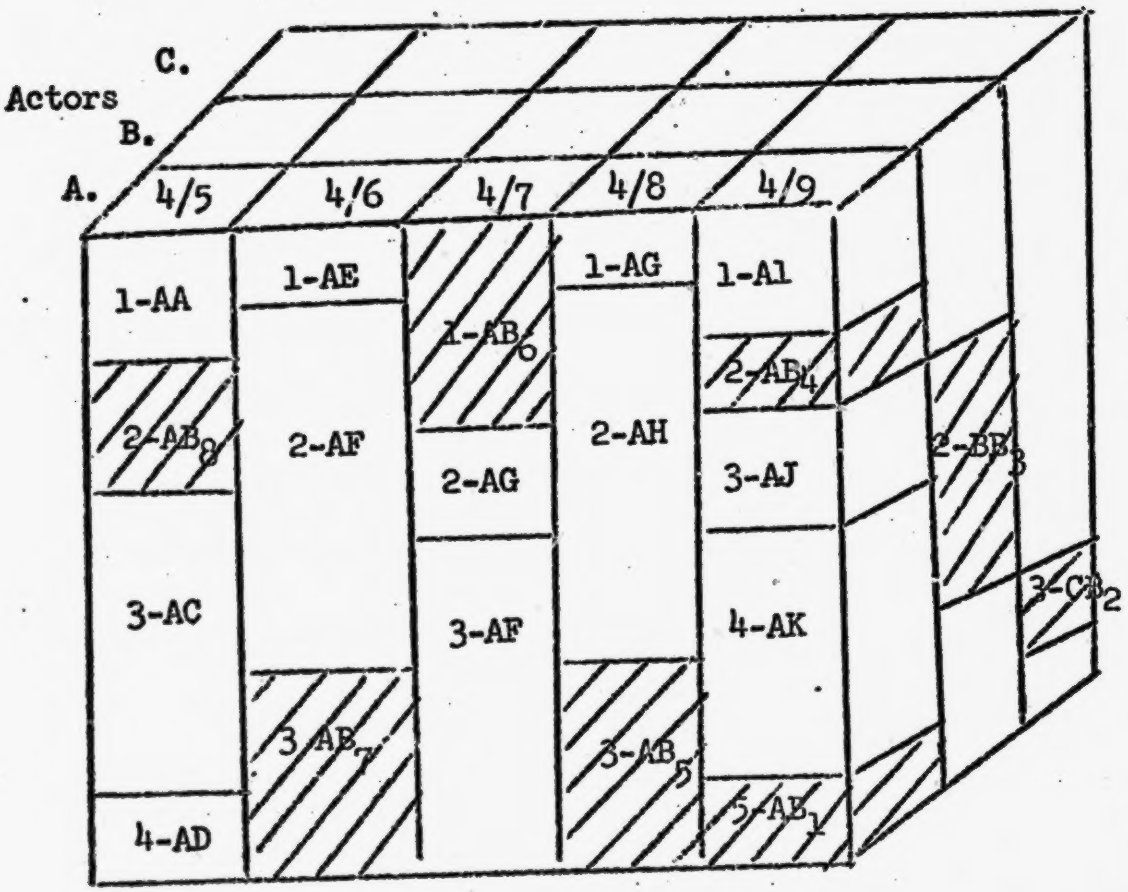
In Figure IV we see a five day week sample of behavior of one central actor. The total behavior is recorded in columns which correspond to days. The height of the column indicates the day's behavior and is broken into unequal segments numbered 1, 2, 3, etc., which correspond to the topics to which the central actor responds. They are unequal in length because the amount of behavior varies from topic to topic. Such segments are called units.

Following the arabic numeral is a letter and sometimes a subscript. The letter designates the case and the subscript the unit in the case. Subscripts are numbered in descending order so that the exact number of units comprising the cases are immediately known. When no subscript appears, the single unit comprises a total case. An example of case A, composed of A_5, A_4, A_3, A_2, and A_1, may be seen in the shaded units of Figure IV. This case is composed of units of 5 and 4 on 4/5/65, unit 3 on 4/6/65, no unit on 4/7/65, unit 2 on 4/8/65, and unit 1 on 4/9/65. Thus it can be seen that a case can be composed of more than one unit in a single day; units which skip days, or a single unit whose topic is not introduced again.

If we agree that Figure IV represents the behavior of a single actor who is central to that figure, we will see that other actors in the organization may also display observable behavior. As such they also may be depicted on a similar figure. If Figure IV is the two way matrix of behavior for Actor A, and actors B and C also have two way matrices, then if we put the matrices of actors A, B, and C together, we obtain Figure V, a three way matrix.

FIGURE V.

THREE WAY MATRIX OF RELATIONSHIP OF BEHAVIOR OF ACTORS


C.
Actors
B.
A.
4/5
4/6
4/7
4/8
4/9
1-AA
$2\text{-}AB_8$
3-AC
4-AD
1-AE
2-AF
$3\text{-}AB_7$
$1\text{-}AB_6$
2-AG
3-AF
1-AG
2-AH
$3\text{-}AB_5$
1-A1
$2\text{-}AB_4$
3-AJ
4-AK
$5\text{-}AB_1$
$2\text{-}BB_3$
$3\text{-}CB_2$

Note: For convenience we have coded only those units of actors C and D which are part of case B.

We now number the units 1, 2, 3, etc., by days for each actor; we then identify each actor A, B, or C and each case A, B, C etc. This makes it possible for various actors to become part of the same case. We, therefore, identify each segment by three digits. The units of a day remain in the same followed by a dash with the letter identifying the actor. This is followed by the letter identifying the case subscripted as indicated before.

We can trace case B as it is seen in Figure V. The second unit in actor A's behavior in column 4/5 introduces case B. Subscript 8 indicates that there are eight units in the case. Actor A is the central actor in the first five units concerned with case B. The case then shifts to actor B, then to actor C, and finally back to actor A. This can be seen on the visible side of Figure V. Thus, we can describe case B as AB_8, AB_7, AB_6, AB_5, AB_4, BB_3, CB_2, and AB_1. We see the sixth unit in case B shifts to actor B ($2\text{-}BB_3$). The seventh unit in case B shifts to actor C ($3CB_2$) and the final unit in case B shifts back to actor A ($5AB_1$).

In the above example we may have been describing the development of an item on the agenda of the administrative cabinet. The superintendent, actor A, has been working on it (AB_8 to AB_4). He now calls the assistant superintendent, actor B, who works on it for a time (BB_3) and turns it over to the high school principal, actor C (CB_2). The principal completes the assignment (CB_2) and returns it to the superintendent who places the item on the agenda (AB_1), thus completing the case. If we were to observe the cabinet meeting, the case would not be completed, however. This item on the agenda and its discussion would be another unit in the case.

It is important to understand the definition of units and cases in order to be able to understand the descriptive material which is available in field research. It is important to understand that an OTU or unit of behavior is not confined by cases. Although unlikely, an OTU could be a case of behavior. More likely, it is a part of a case.

Perhaps it may seem to some readers that we have belabored our topic by developing what we believe to be the relationship between the total description of behavior, the cases, and units of behavior. It was, however, the very lack of such a detailed description which caused us the greatest difficulty in organizing the field data. We hope that our discussion will prove useful to the field worker in the educational field setting in the future, and therefore, we have presented this detailed discussion.

Theory of social anthropological data collection:

In his book The Human Group, George C. Homans[1] describes the three basic elements of behavior as activity, interaction and sentiment. 1) Activity is the task in which people engage. It could be answering the phone, fishing, going to church. By task we do not mean physical labor necessarily, but rather a task activity. 2) Interaction is the exchanging of a stimulus with another person. Thus the action of person A becomes the stimulus for the action of person B. Although communication is usually thought of as encompassing the term interaction, communication, in its usual sense, is only a portion or a type of interaction. 3) Sentiment in the Homanian sense includes all "inner states" of the individual such as love, hate, friendliness, fear, anger, etc. Many times sentiment is exhibited by words, gesture, or facial expression.

If we agree upon these as the three basic elements of human behavior, and if we know the activity, interaction and sentiment which has taken place, we have a reasonable description of the behavior which took place. In addition, we have a description which, to a large extent, is void of a framework of what should take place. It will be recalled that this was our objection to many field studies. When data are collected under the assumptions of a particular theory of behavior (i.e., general systems or stimulus-response learning), it is sometimes difficult to analyze the data without the concepts which exist within that particular theory. We do not believe this is true of our data collection framework. Our assumption is merely that human behavior is composed of activity, interaction, and sentiment and that a description of these provides an adequate description of behavior. One can analyze this description of behavior without referring to the original framework. We may categorize the sentiments as outputs, or unanticipated consequences, or responses, or as normative statements, etc. The framework of data collection does not mandate the framework of analysis.

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[1] Harcourt Brace, 1960.

We should hasten to retreat somewhat from so positive a position of neutrality. There are some things which probably could not be used as a framework for analysis within our system of collection. It is necessary that the item be recognized as one of the three components of behavior before it can be recorded.

We understand the Indians of nothwest United States had no name for the giant sequoias. They had no use for the hugh trees as, within their implementation, they could find no way to utilize them. Their behavior was not affected by the existence of the trees. Had the trees been used for food, as were the coconut palms by the South Sea cultures, or thought of as gods or the residence of gods, as the mountains were to some American tribes, they would have entered the description of events within the behavior of the culture. But to them the trees were useless and devoid of description within the culture. They concerned neither the activity, interaction or sentiment of the tribe. While some may be amazed that so large an object in the environment of the Indians was not even named, we are not. The trees, in fact, were no part of their lives and to describe them when describing their culture is meaningless.

To use another example which is more commonplace in our culture, if a certain statistic is of no consequence to the cultural system, (i.e., the height of the grass in a subdivision), it is not described. If a resident allowed the grass to grow all summer without cutting it and the community became incensed about this fact, the height of the grass would be stated and the sentiment about it would be described. It is interesting to note that while the normal height of the grass, as related to sentiment, might have no meaning and therefore not enter into the description of the behavior of a suburban community, the activity of cutting grass and the interactions between neighbors engaging in this activity might be critical to a description of behavior of the community.

Now we have come to the area where all social AND cultural anthropologists are vulnerable. It is impossible to observe the totality of behavior. An observer can only record what he sees, and he records this through his five senses which are not always as truthful reporters as we would hope. This should not surprise us. Rather, the surprising fact is that we tend to think that the physical sciences and experimental research in general are not subject to the same inadequacy. The totality of behavior of any object under observation is never actually observed. So the atom, once pronounced the smallest particle of matter which could be isolated, upon further examination is being rediscovered in terms of the "new" behavior of the atom. The discovery of new observation instruments usually is followed by the discovery of some new behavior related to the old phenomenon. The most a researcher can be expected to do is describe the instrument he is using, the object of his observation, what he observes in behavioral terms, and how he checked the reliability of his observations. An improved science may discover additional information which sheds new light on the phenomenon. Thus, the scientist may make some small contribution toward a more complete science. Finally, an improved science will indicate that he has been wrong, in some aspects, at least under new conditions, but only because the original scientist made such an observation possible.

To summarize the work of our field study, seven separate observers worked in the field collecting data concerning the activities, interactions and sentiments of individuals within the school district. Observers also collected data within an institution of higher education. It was planned that although two observers would not be assigned to observe the same behavior at the same time, their observations would overlap in two ways. They would independently, at different times and on different occasions, record sentiments and reports of interactions which should validate the data collected by other observers. Secondly, the course of events would on occasion bring two or more observers together. The reports transcribed by separate observers would offer a chance to check the reliability of the observations. Finally, through the field study, films and tapes of actual behavior were made in conjunction with the narrative reporting. Thus, a review of the behavior was possible. In addition, the number of observed events number in the hundreds. Each OTU is an example of behavior which is representative of behavior seen many times in the field study, not just once. Thus, each OTU gains validity in terms of the fact that it is demonstrably typical of the organizational behavior of Central District.

The OTUs operationally defined the unit of behavior a taxonomist was required to classify. They were developed from the total description of behavior, developed from the field notes, and determined by the field study staff. In this manner each taxonomist focused on the same behavior. This is an essential step for those who attempt to classify behavioral descriptions of administrative activity. It is possible to place the behavior into manageable units. As indicated earlier, the TOBE project defined such a classification as an OTU, the smallest possible unit having: 1) a purpose; 2) actors; 3) history; 4) behavior and dialogue; and 5) an outcome. These OTUs comprise cases in the life of actors. ~~As the OTUs chain and are centered on the same topic of behavior (i.e., the passing of a board issue), a case develops. Finally, as time passes in the history of a school district, many cases develop, usually simultaneously. The interweaving of these cases forms the total description of behavior through the period of history observed. We, therefore, have what might be called a "taxonomy of field data."~~

The Public School District:

The following criteria, modified from the D.C.S. Study,[1] were used in selecting a school district for the field study in the TOBE study.

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[1] This study is described in Administrative Performance and Personality by Hemphill, Frederiksen, and Griffiths (Teachers College, Columbia University), 1962.

1. The school system should provide a possibility for presenting a wide range of typical problems. At a more detailed level:

    a. The school district should have an educational program encompassing at least grades 1-12 housed in separate buildings according to some educational plan such as 6-3-3, 8-4, 4-4-4, etc.

    b. The community should contain families from a variety of socioeconomic backgrounds.

    c. The school system should participate in state and federal programs.

    d. The community should be one which is growing in population with a school building program in progress or being considered.

    e. The population of the community should be heterogeneous with respect to religion.

    f. Many members of the community should actively participate in educational issues.

    g. The community should be a relatively autonomous unit (i.e., not a suburb or a large city).

    h. The community should be urban rather than rural.

    i. The population should be in excess of 10,000.

    j. The school district itself should be at least a semi-autonomous unit.

    k. The school system should carry on some form of pupil transportation.

    l. The organization of the school system should be relatively "flat," with few levels of authority structure.

m. The school system should be a reasonably good school system.

2. Convenience should be considered:

a. The system should be readily accessible to the research staff at the School of Education, New York University, New York City.

b. The community should be relatively easy to disguise.

c. The school system should be one which has been surveyed within the last few years in order to avoid the necessity of repeating this work.

3. Research staff members should have full freedom to observe and ask questions.

a. The Board of Education, chief school administrative officer, and school staff should be willing to participate in the study and to cooperate with the research staff.

b. There should be no focal community conflicts.

c. Members of the school system staff should have a relatively high level of morale and a feeling of security in the system and in their schools.

Based on the belief that organizational behavior centers around organizational roles, the following roles were selected as focal points of observation: 1. The School Board, 2. The Superintendent, 3. The Elementary Curriculum Director, 4. The Senior High Principal, 5. The Junior High Principal, 6. An Elementary School Principal.

Individual events and sequences of events were recorded while observing each individual in the above list. By placing the individual observations together, several cases within the organization emerged involving several actors (e.g., recruitment of teachers, policy making, special curriculum areas, etc.). From the total description of behavior, OTUs were "mounted" as described earlier.

Neither the field study nor the OTUs are intended to be descriptive of the universe of organizational behavior. We have not developed, nor was it our intention to develop a picture of a "typical" public school district. Central District is not a stereotype school district. It will differ from other school districts no more nor no less than any district differs from another. Our purpose was to develop a representative picture of a single school district. The OTUs are actual behavior in this district. The study, therefore, has classified all the samples of behavior gathered in an extensive study of organizational behavior in a single district. The fact that all samples were classifiable, as well as some samples gathered from a totally different organizational situation, leads us to believe that the taxonomies will prove useful in classifying behavior in other educational organizations.

The district called Central District was less that fifty miles from Urban City and was located in a county noted for its conservative philosophy. The area was rich in American tradition and dated from Colonial days. The first public school was established in the mid 1800's. Through a series of consolidations and population growth the district had grown to include six elementary schools housing approximately 2,280 pupils, and one junior and senior high school building housing approximately 1,420 pupils.

It was estimated that the district would double in size within the following ten years. In addition to the public schools, several parochial schools were operated within the boundaries of Central District.

Good rapport was maintained between the parochial schools and the public schools as demonstrated by the remark made by the local Monsignor to the effect that he hoped the superintendent would not leave because he and Central District's superintendent got along well and, "I would not want to have to break in a new superintendent."

The Central School District was comprised of three small communities. While the communities were separate, they all were in the same township. There was a feeling of oneness in the school district as demonstrated by the concern over the situation related to the superintendent's job that will be described. Some of the residents worked in Urban City but Central District was not a "bedroom" district. There were several large industries in Central District. U. S. Oats was in Central District and had grown from a small family owned operation to a large nationally known cereal manufacturer, a sponsor of nationally televised shows. There were other industries in Central District including a large scientific corporation. An indication of the loyalty of the residents to the District and the fact that it was not a community of commuters can be illustrated. One of the board members, a Ph.D. in chemistry, who worked for the scientific corporation was to be transferred. He refused the transfer and offered to take a cut in order to stay. If the corporation had not complied with his request to remain in Central, he stated he would have sought a position with another firm. "I won't leave this community!" he had declared. There are other instances. The district attorney of Central at the time of the study had given up his job in Urban City so he could spend more time in the area. While other instances could be cited, these should suffice to demonstrate the community spirit which existed in Central District.

The education program in Central District was a good one as illustrated by the fact that of the twenty-two participating schools in a nationally known survey of American High Schools, only one ranked above Central District. Dr. Circle had been in the district for twenty-one years. He had served in the capacities of teacher, high school principal, and for the last fourteen years as the district superintendent. During this time he had established a good reputation in the area and was known among the other superintendents in the county as "The Old Philosopher."

There had been controversy in the District, however. During the year prior to the study, a segment of the board had challenged Circle's leadership. This controversy centered around Monroe, the board president. At one time Circle described Monroe as "...the S.O.B. who started this business to fire me." According to Circle the trouble started over the buildings and grounds area of administration. Monroe, who had been in the construction business, thought he knew more about the area than did the assistant superintendent. Circle supported the assistant superintendent and even recommended him for a raise. This fact so irritated Monroe, Circle stated, that he decided to cause Circle trouble. The assistant superintendent left Central District because of the controversy and Monroe then focused his attention on Circle.

As an administrator, Circle was almost completely ideographic. There was little formalized structure in the organization. Circle was perhaps the best example one could find of an informal leader running a formal organization. The board had never established a written policy book. They operated without written by-laws for governing their own operation. For fourteen years this had worked fine, so far as Circle was concerned. The informal manner in which the District operated left many areas which could be criticized from the formal organizational standpoint. Circle sometimes moved ahead with an idea without formal board approval. The fact of the matter was that even when Circle asked the Board they would often simply say, "That sounds all right, go ahead," and took no formal action. They balked at taking formal action as when Circle asked that the Board approve an architect and a specific fee to perform certain work in the District. It took three meetings to get formal approval; it came only over some objection and after a motion to direct the architect without specifically hiring him or setting his fee. Only after objection by the clerk did a motion to hire the architect and set his fee receive positive board action.

As stated earlier, Circle was quite willing to operate in this informal fashion. He preferred it. But he was vulnerable and when the time came there were areas where those who wanted to make an issue could point in order to create trouble for Circle. This time came during the year prior to the study. The problem over buildings and grounds has already been described. Trouble was precipitated when Mr. Dodson died. He was Circle's close friend and the owner of a local bank and had been a board member for twenty years. He was replaced by Mr. Logan. In short order, Circle's new contract did not receive approval by the Board. Five members voted against and one voted for the new contract. It appeared as if Monroe would succeed in fulfilling his promise. According to numerous accounts by Central District faculty, Monroe had bragged "downtown" that he would "get rid" of Circle and even stated the name of the person he would choose to replace Circle.

It was ~~not~~ unusual when it was transmitted formally. News which was detrimental to the administration was always "leaked" to the local newspaper. The news of the forthcoming negative vote on Circle's contract had gotten to the Monsignor in Central township. The day before the vote he called Circle and cautioned him not to resign and told Circle that he had his support and everything would work out. Additional support for Circle was obtained when a small group of local businessmen organized to support Circle. These men were dubbed by Circle as "Sons of Freedom." He frequently referred to them in this manner. A petition was circulated by the "Sons of Freedom" requesting that the Board reconsider their action. Seventy-two hours after the Board's vote, three thousand signatures were obtained on this petition.

It was clear that whatever may have been Circle's shortcomings, informal leadership was not one of them. Other administrators in the District, teachers and pupils as well, sought Circle's advice on both personal and professional matters. Sometimes it appeared as if lines of communciation and decision-making existed only informally. Immediate superiors were often bypassed in favor of going directly to "the boss," as Circle affectionately was referred to by some. In a case study of seven months, however, no one within the system, with one exception, was heard to complain of this. Those members of the professional staff who may not have been strong supporters of Circle were in such a small minority so as to go unnoticed.

Early in the spring a local university proposed Central District as a site for a study. In requesting permission to use the District for the collection of data, a very flattering letter was sent to Circle. This letter "leaked" to the pro-Circle newspaper the day before the school board saw the letter. Board members read it in the newspaper. Within a week Moore indicated that he would not run for re-election, and the Board approved a one year contract for Circle by a vote of four in favor, two opposed and Long, the newest member, abstaining. The vacated seat on the Board was won, unopposed, by Dr. Cox, a strong supporter of Circle.

Moore's antagonism for Circle continued. Before he left the Board, a firm of business consultants was hired to make a study of the district. Their preliminary report was given to the Board when Circle was not present, the week before Moore's term expired. By the following day the worst phases of the report, all unflattering to the administration, were "leaked" to the anti-Circle newspaper and were in print. The business consultant firm told Circle and the Board that the headline on the article had "misquoted them." They further indicated that they had not given the information to the newspaper.

Moore's term expired and he was replaced by Coty. Only one of the men who had opposed the contract under which Circle was serving remained on the Board. The new president had voted for Circle's last contract and the vice-president, who emerged as the informal leader of the Board, had voted for the first contract which had been defeated. So it was in this setting that the OTUs presented in Appendix A took place. This setting is essential to the classification of these OTUs. Rather than burden the reader at this point with the vast amount of data contained in the OTUs, it was decided to present these in Appendix A.

So that the reader may be familiar with the form of the OTUs used in this study, the OTUs from Central District that were used by the taxonomists to illustrate their schemata are included here.

Who's Interviewing Whom?

Level - Middle and Top
Task - Personnel
Purpose - To interview a prospective teacher
Actors - Trotter, Elementary Curriculum Director
James, Assistant Elementary Curriculum Director
Circle, Superintendent
Candidate being interviewed

History - The candidate had an appointment to see Circle. She had talked with Trotter and James briefly before the conference began.

Abstract of Behavior - An interview was conducted with the candidate regarding the possibility of her teaching in Central District. Circle was interrupted several times and the interview continued without him.

Outcome - Circle told the candidate he would let her know if she was hired within one week after the candidate let him know if she definitely wanted to teach in Central District.

Description of Behavior - Circle returned to his office with Miss Trotter, Director of Elementary Education, her assistant, Mr. James, and a candidate for a teaching position. Wood left the office and said he would return to continue his report.

Circle asked the candidate, 'How did you hear about us?'

She responded that a girl in her dormitory was from Central and always spoke highly of it.

Circle questioned the candidate regarding her high school activities (i.e. preferences, honors, etc.)

The girl said that she had not been in the honor society in high school and Circle asked, 'How did you get into Rangeland?' He then asked her about her experiences working with children.

While the candidate was responding, Circle returned to his desk to receive a phone call. He discussed what appeared to be personal business, his recruiting trip, some church activities and some school board business. The call lasted for about fifteen minutes. Meanwhile, Trotter and James continued the interview and the conversation turned to the topic of Rangeland graduates who were teaching in the Central District.

Circle rejoined the group stating, 'That was one of the three who led the revolution to save me. . .a son of liberty.' He then turned to the candidate and said, 'You 're more important than the other people here---teachers make a school system click.' He suggested she visit the Peach Lane School.

Circle was again interrupted by a phone call. This time it was a candidate from Towne College. He made an appointment and gave her traveling directions.

Circle once again returned to the group and, calling the candidate by her first name, asked if she was considering other offers. He said, 'We must leave it this way, let us know after seeing the school whether you are definitely interested and we'll let you know at school of our decision.' Miss Trotter suggested that they let her know by the next Monday. Circle responded, 'We will let you know within a week after hearing from you.' He then complimented her for not having asked about salary. He told her the starting salary at the B.A. and M.A. levels and asked her if she planned to do graduate work. She said she was considering doing graduate work. Circle raised the question about attending Ellsworth College or Urban University. This began a discourse on mental health which led to Circle giving his philosophic position on crime in the big city.[1]

A County Superintendents' Meeting

Level - Top
Task - Community
Purpose - To exchange ideas with other superintendents in the county and maintain relations between districts.
Actors - Circle and other superintendents in the county.
History - A notice of the meeting had been sent with a tentative agenda for the meeting. The meeting of this group was regularly held during the school year.
Abstract of Behavior - Circle attended a County Superintendents' Meeting at which various topics of interest were discussed (e.g. the Community College, special B.O.C.E.S. program, pupil transportation, income tax laws, the next meeting, surplus property, school budgets, a 'thinking period,' and Circle's board problems).
Outcome - Everyone had a good time but no group decisions were made.
Description of Behavior - On arrival at the Steak House where the meeting was to be held, Dr. Circle remarked, 'I will get a lot of kidding.' He said, 'Among other things, they kid me a lot about my feet. I wear a size 14½ shoe.' Several members of the County School Executives were seated around a table in one of the private conference rooms. Ten school superintendents were in attendance at this meeting. There was a lot of joking at the County Executives' Meeting. They referred to Dr. Circle as 'the old philosopher.' Expressions of sentiment at the meeting indicated that those in at-

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[1] Daniel E. Griffiths, et al., Operational Taxonomic Units, U.S. Office of Education Contract #5-0792-2-12-1 (New York: New York University, 1966), OTU 1, p. A1-3.

tendance were long time friends.

The meeting lasted from 10:30 until 3:00 P.M.* Business was conducted during the cocktail hour, as well as during a luncheon. The first agenda item was a discussion as to whether Community College should accept a $110,000 grant for technical equipment. The reason for the discussion was that the president of the college had indicated that this equipment would take up several classrooms, and the college was already overcrowded and there was a shortage of general classroom space. The philosophy of the president was to develop a master plan in order to establish what he perceived would be a model community college. Dr. Circle and a majority of the school executives believed that the immediate need should be met, even if mobile classrooms had to be used. It was also proposed that enrollment of students from other states should be curtailed or eliminated so that the college could meet the needs of students from the local county and state. Dr. Circle made a long speech defending his position regarding the junior college. He stated that the college should meet its immediate needs and that he thought a junior college should be for 'the common man' and should act as a terminal college for certain technical people, such as 'medical technicians.' He said the president was in favor of establishing the college as a well known transfer college. Dr. Circle explained the difference of philosophy between himself and the president of a junior college. Dr. Circle believed that the junior college should be a 'little Amherst,' Circle said.**

Two other items covered on the agenda were: a special program for children with significant hearing loss, a program sponsored by B.O.C.E.S., and minimum and maximum distances that students should be transported to school.

The county was near the state line and there was considerable discussion as to whether certain districts should continue to provide transportation for students who lived in another state.

A lengthly discussion of personal Federal Income Tax took place among the school executives. They all stated the various methods that they had used to reduce their income taxes. Several of the methods mentioned were: use of the home as an office, placing monies in tax free annuities, and working out a rather complicated procedure on giving gifts to children for college education. The younger members of the group were more knowledgeable in this area than the older members. Dr. Circle thought it would be wise to call in an accountant to help them with their personal income tax next year. It was stated by the president that since most of them made $22,500 to $27,500, and since about 30% of their income in this case would go for taxes, it would be well to work out tax savings procedures which would be beneficial to the group.

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*Dr. Circle was second in the initiation of structure in this group.

**Dr. Circle was the only person at the meeting with any authority since he was a trustee of the Community College. The rest of the school executives could only make recommendations to the president of the junior college.

The next item on the agenda was salary schedule. Salary schedules were discussed extensively, not only teachers' salary schedules but also administrative salary schedules, and each administrator related his salary to the exact dollar.

The next item on the agenda was a progress report on a learning and cultural center which was administered by B.O.C.E.S.

The next item was surplus property, automobiles, tools, fencing, etc. The members agreed that they should keep in closer touch with the surplus property board in Albany and keep their eyes open for 'good buys' for the districts in the county.

There was some discussion about state legislation and the fact that everyone present should write a letter to their respective legislators indicating the type of legislation that school men supported.

The next item on the agenda was a lengthly discussion of the school budgets for next year. This included the raise in budgets and why the raises were necessary. Dr. Circle was less knowledgeable in the area of finance than any member of the group and he admitted it. He constantly said, 'Well, I don't understand all of this,' and he certainly did not consider finance one of his strong points. He stated his strong points were public relations and instruction.

The final agenda item was a 'thinking period.' It was Dr. Circle's prerogative to introduce a topic. The topic he introduced was, 'Where do we get history and English teachers?' It seemed that all of the superintendents in attendance wanted teachers who would teach social issues. One superintendent said that he had an English teacher who was sending students to interview him biweekly on topics such as, 'What do you think of unwed mothers?' A younger superintendent jokingly said, 'Does this teacher have tenure?' The superintendent replied, 'No, do you need a good English teacher? This one is going to be needing a job.'

Just before the meeting adjourned, Dr. Circle asked the other members of the school executive group what they would do if they were in his position, referring to the fact his contract had not been renewed. He said, 'You know that the people in the community are behind me. Do you think I should go for a one year, a three year or should I go for a four year contract because I can retire in four years?' All of the members were very understanding. They hesitated to make a recommendation, however, except to say they thought Dr. Circle was in the best position to analyze the struggle in the community, and that he should make a decision regarding his position as superintendent in the district on the basis of the knowledge and the data that he had on hand.[2]

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[2] Ibid., OTU 3, p. A8-12.

How We Hire A Teacher

Level - Top and Middle
Task - Personnel
Purpose - To recruit a teacher
Actors - Circle, Superintendent
Sampson, High School Principal
Mary Long, prospective teacher

History - Mary Long was interviewed during the Christmas Holidays regarding a position in Central District. She decided at that time that she would rather teach in another location but had since changed her mind. Therefore, she had made another appointment with Circle.

Abstract of Behavior - Sampson and the candidate entered Circle's office. Circle asked the girl if she was really interested in teaching in Central District. He told her the salary she could expect. The girl was sent with Sampson to see the building and meet some teachers. Meanwhile Circle called to obtain a recommendation. Circle and Sampson discussed the candidate privately upon returning from the tour. Circle offered the candidate a job at one figure provided she received a good recommendation or $200 less if she did not.

Outcome - The girl was offered a job in Central District. The highest salary figure offered was contingent upon a good recommendation. The recommendation was received. (Although not in this specimen, the girl signed a contract for $5,700 two days later.)

Description of Behavior - At about 1:15 Sampson, the high school principal, entered with Mary Long. Circle began interviewing the candidate by asking about her scholarship, honors and schooling. Sampson left the conference for a few minutes and went into DeVoto's office to see what the District's specific needs in the area of mathematics would beforq the coming year. Circle asked the candidate what levels of mathematics she would be willing to teach. Circle then said to her, 'What is your pleasure---eager or just looking?' The girl replied, 'Eager.' Circle then asked Sampson, 'Is Joe Niehouse back yet?' Then he said, 'Well, Mary, I'm in the mood to do business. Are you?' He then suggested to Sampson, 'Have her meet a few people,' indicating that Sampson should take her on a tour of the school. He indicated that she had a 2:00 o'clock appointment in a neighboring district. Circle then said, 'I've made up my mind. You have to click with the department head and the principals. Salary is $5,500 but there is a possibility that we could pay you for your applied experience and semi-teaching experience.' (The experience he was referring to was that of being an undergraduate assistant at the college she was attending.)

While the candidate was out visiting the mathematics teachers, Circle called the superintendent in the adjoining district where the girl had attended high school and asked him about the candidate. The superintendent said that he didn't remember her, that he would look up the information and call Circle back.

When Sampson returned with Mary Long, Circle asked that they be excused. He and Sampson went into DeVoto's office. When they returned to Circle's office they told her that they were interested in hiring her and that after she had her other interview, she should let them know what her decision was between the two positions. Circle told her that she would have a choice of two positions in Central District. He also told her of the call that he had made to her former superintendent. He said that if the report was good he would offer her $5,700, otherwise $5,500. However, he cautioned her to decide on the people that she would work with and not on the money. He then asked her as he had done with other candidates, what the percentages were that she would accept the Central District position.

Circle

After Sampson and the girl left, Rounds resumed the task of reading his mail. (His secretary was out this day.) The superintendent whom he had called earlier returned his call and said that Mary Long was a good leader and that he would hire her. He said that she had been tenth in a class of 180. He stated that she was among the top students the high school had produced the last few years.[3]

Who Should Teach Health?

Level - Low
Task - Curriculum
Purpose - To decide whether the teaching of health should be assigned to the physical education department or the school nurses.
Actors - Sampson, High School Principal
Niehouse, Junior High School Principal
History - No specific department in the school was officially responsible for teaching health.

Sampson and Niehouse were in Sampson's office discussing the health curriculum and possible changes which should be made for the next year.

Abstract of Behavior - Discussion between the two principals regarding the assignment of health teaching in the school.

Outcome - A general agreement that physical education teachers would be more qualified to teach health than the school nurses.

Description of Behavior - Niehouse and Sampson were discussing the health program for the next year when the following behavior takes place.

Sampson: We should decide who is going to teach health next year. What is your opinion? Do you believe the teaching of health should be the duty of the physical education teachers, or do you believe the school nurses should teach health?

Niehouse: When I was a coach teaching physical education, I felt there was a close relationship between the two subjects. I always combined health teaching with the physical education program.

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[3] *Ibid.*, OTU 4, p. A13-15.

Circle was passing Sampson's office and Sampson asked Circle to come into the office. Sampson asked Circle his opinion regarding the matter.

Circle: I feel the physical education teachers should be better qualified to teach health than the school nurses.

At this point there was agreement by Sampson, Circle and Niehouse that the teaching of health should be in conjunction with the physical education program.[4]

It will be recalled that a two-week field study was conducted in a setting of higher education. While this period of time did not provide a view that was as comprehensive and detailed of this educational organization as did our field study in Central District, it did provide specimens from a different setting. A brief background and two OTUs from higher education are provided here so that taxonomists may use them to illustrate their schemata and the reader can understand the nature of the twenty-four specimens that were collected in this setting.

Urban University was located in the heart of a large urban center. It had a history of more than fifty years and was comprised of the usual complement of schools, including graduate and undergraduate divisions. The School of Education was NCATE accredited and offered B.A., M.A., Ed.D. and Ph.D. degrees. Our two week field study took place in the summer and centered on the University's Summer School. As the School of Education accounted for a large portion of the Summer School's activity, a large segment of the data relates to the activity of this school of the university. Thus, the position of Dean of the School of Education was vacated and a department head from the School of Education was appointed as Dean of the School of Education's Summer School. Our field study focused on these two positions, the Dean of the Summer School and the Dean of the School of Education's Summer School.

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[4] *Ibid.*, OTU 41, p.A103-104.

Many of Urban University's policies were enacted by faculty action and recorded in minutes of faculty meetings. A complete set of policies governing the operation of the Summer School did not exist in a single volume or as part of any single volume. The Dean of the Summer School and the Dean of the School of Education Summer School, having held these positions for many years, had a knowledge of policies which no one else enjoyed. Often matters which would have otherwise seemed unusual for a Dean to handle were referred to the offices upon which this study centered. The following are two specimens gathered in this setting.

Stars

Level - Low and Middle
Task - Personnel
Purpose - To secure an outstanding professor for the next year's summer session.
Actors - Dr. Cook, Director of Summer School
Dr. Lewin, Acting head of Social Studies Department
History - Outstanding professors had been recruited for summer school teaching as part of the university's centennial program. It was the policy to begin recruitment for the next year's summer program during the summer session so committments could be made after September 1st.
Abstract of Behavior - Cook and Lewin discussed the problem of bringing top professors from other universities to Urban University for the next summer program. They also discussed the problem of salary for such professors.
Outcome - Cook agreed that Lewin should contact the specific professor in question but warned him not to enter into an agreement.
Description of Behavior - Lewin: Can we continue our tradition (Laughs) we thought of this year of having a star outside the department this summer. The justification, remember, this year was that Brown was coming, is going to take part in the . . . .
Cook: (Interrupting) Brown is here from the University of London.
Lewin: Yeh, he is going to take part in the Centennial Year.
Cook: Yes.
Lewin: The justification for getting stars in the next couple of

years would be in philosophy as far as our program for recruitment, as we are losing both State and Wynn in the next couple of years.

Cook: They will both be here next year?

Lewin: Oh yes, yah.

Cook: And do they both want to teach next year?

Lewin: Oh yes, yes. This would be in addition, in other words, this would be a part timer for someone who has established some . . . .

Cook: (Interrupting) And Brown is doing this precise thing this year (Lewin interjecting: 'That's right.') so that we could support a visiting star.

Lewin: Yes, yes.

Cook: Brown's field is really the philosophy of . . . .

Lewin: (Interrupting) Comparative education.

Cook: That's right. Do you think we should have someone in with a slightly different specialization next year?

Lewin: Oh,yeh. I would want to have someone in philosophy because, as I said, this would be part of our planned program of recruiting somebody as a full time . . . .

Cook: (Interrupting) I think that is an excellent idea and I think we are certainly justified in having one visiting staff (Lewin interjects: 'Right.') member. You will have to, when the time comes, I mean when you focus on someone, negotiate that (Lewin interjects: 'Yes.') as to salary.

Lewin: Yes, that the . . . .

Cook: (Interrupting) I should, the usual formula that is that we have implemented this year is that we take the visiting and we use the salary of his home base and apply our formula to that basis unless his salary is much more than what is true of the corresponding rank here.

Lewin: I see.

Cook: In other words, if he is a professor for another institution, his salary would be much higher than what a professor would earn here. Then we use the median salary for the professional rank that obtains this year as a base figurative salary. But this you will have to negotiate when you focus on someone.

Lewin: Ya, we have put out feelers to one man who we are interested in. He, unfortunately, teaches, will begin teaching next year at British Columbia.

Cook: So he would not be available?

Lewin: Oh, he'd be available but he would want to get a minimum of $2,000, but I didn't know this formula.

Cook: Well, what is his, what is his institution?

Lewin: It will be the Univeristy of British Columbia. The University of British Columbia.

Cook: I see! I just assumed he was down there on a . . . .

Lewin: (Interrupting) No, he's leaving upstate.

Cook: You have to find out what his salary is there, his annual salary (Lewin interjects: 'Uh uh.') for the academic year (Lewin: 'Yes.") and if it is approximately that of the median salary here for that rank, (Lewin: 'Yes.') professional rank, then we would use his salary as the base (Lewin: 'Uh uh.') and pay him according to our formula.

Lewin: Your formula is?

Cook: One thirty-sixth of the annual salary (Lewin: 'Yes.') for a full week of assignment. In other words, if he taught six weeks it would be six thirty-sixths or one sixth of the annual (Lewin: 'Yes.') or three weeks would be one-twelfth (Lewin: 'Right.') of his salary, I would not suspect that it would be more than median, what is the medial for professional rank here? If it were then we would use the median salary here (Lewin: 'Yes.') for that rank. The median salary next summer, (Lewin: 'Yes.') in other words, once it is computed after September 1st.

Lewin: What would that be approximately?

Cook: I don't know. For the past year the median is thirteen. It will go up certainly (Lewin: 'Yes.') but what it will be for the next summer I don't know.

Lewin: Good, well that's very encouraging. I think we can work something out. Then the last thing. Will you be available? I'd like for you to have . . . .

Cook: (Interrupting) Now you might, when you explore again this matter of salary, don't enter into any firm (Lewin: 'Oh, no. No.') of any sort. Cause that you and I or whoever is acting as director of summer sessions will have (Lewin: 'Oh, yes.') to do after September 1st. (Lewin: 'Right.') But as of this date I can say to you, go ahead, and think of having a visitor (Lewin: 'Fine.') in addition to the two professors which you have at the moment

Lewin: Very good.[5]

Certification First

Level - Top
Task - Community
Purpose - A student desires a change in courses to meet certification requirements,
Actors - Dean Caine, Dean of University Summer Sessions
Student
Dan Dudley, Chairman of Department of Sociology
Joan, Girl in recording office
Jim Morrison, Professor in Dudley's department
Aram Hall, Professor in Dudley's department
History - A student needed to take three points during the summer in order to meet certification requirements. She was taking a two point course and wanted to meet the certification requirement.

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[5] Ibid., OTU 64, p. A166-169.

Abstract of Behavior - The student explained her problem to Dean Caine. Caine called Dan Dudley to see whether she should take Independendent Study or whether another course for one point should be set-up. Dudley suggested that she change to a three point course given by Professor Hall. Dean Caine agreed with this solution and told the student how to make the change. Before she left he called the recording office to alert them to the student and informed them that the change had his approval.

Outcome - The student met the three point certification requirement by switching courses.

Description of Behavior - Caine: Let me see if I can get Dr. Dudley, if not, his secretary. Now what is the course number?

Student: E20.1073.

Caine: You are a graduate student?

Student: Oh, yes.

Caine: Is the requirement you are trying to meet a certification requirement or a degree requirement?

Student: Certification.

Caine: (Caine phones to Dr. Dudley.) Dan, Tom. A student at my desk, a graduate student matriculated in the school of Arts and Sciences registered for E20.1073 which is one of the courses, the one in which the mistake was made, you know (Dudley interjects: 'Yeah, yeah.') three points instead of two. (Dudley: 'Yeah.') Now how it happened I'm not sure. But she, perhaps it happened because in this case the checkers would have been the graduate school checkers rather than (Dudley: 'Ah, hah.') the School of Education. (Dudley: 'Ah, hah.') It went through without anyone here catching it. The point is that she requires the three points for certification. She requires the three points in educational sociology for certification and my question is whether we could do one of two things. Either give her, she is a graduate student, give her one additional point of independent study, which she could work out with her instructor (Dudley: 'Ah hah, ah hah.') or ah, perhaps we could, I think this is the lesser (difficult) of the two alternatives, we could, ah, set up another course, 1073A or something like that or (Dudley: 'Ah, hah.') for one point and have them meet together and again they will cover the same thing and that will help her reach her requirement. Who teaches that course by the way?

Dudley: The 1073A is the second six weeks. The second three weeks, I mean, Jim Morrison.

Caine: Which way do you think would be the better way? I think we have to do something, because, we - plans (Dudley: 'Yeah, yeah.') are predicted . . . .

Dudley: Could we put her in Hall's, ah, ah, 'Social Control?'

Caine: Would you, you see that ah, ah. First of all that has met three times, would you permit her?

Dudley: Oh, yes, since she has been attending the other classes, sure.

Caine: Well, let me, ah, ah, would you hang on just a moment . . . . (Directed to student.) There is another class meeting precisely at the same time called 'Education and Social Control' taught by Professor Aram Hall. You have missed, of course, three days, but since you have attended the other class we could very easily transfer you. The introductory work, first work for these classes is very similar. This would give you an educational sociology course at the same time of the day and it will meet the requirements and from our point of view and it certainly will comply with your certification. If you do not have any objection to that shift. (Returns to phone conversation.) I think that is a very much better idea myself.

Dudley: Aram would understand and would help her catch-up from where she is.

Caine: Would you be willing to speak to him (Dudley: 'Yeah, yeah.') so that he recognizes here tomorrow and also speak to Mr. Morrison (Dudley: 'Morrison.')

Dudley: I believe he is in, and I'll pick up, have her come down here and I'll have her make out a drop-add slip.

Caine: No, it has to be made out on a graduate school Arts and Science form.

Dudley: Oh, all right. Then she will have to get that.

Caine: All right then I'll have her come down to your office and pick up the class card from Mr. Morrison.

Dudley: All right, wonderful.

Caine: Fine, thank you very much. (To student) If you will stop in the education sociology department office, do you know where that is? It is the second floor of the building next door, it's called the Brown Annex. In fact if you will walk downstairs from my office, on the landing on the second floor you will see an entrance to the next building, and I think there is a sign on the door. Go in there and ask for Dr. Dudley or Mr. Morrison, get your card back. Then go over to the graduate school of Arts and Science and fill out the drop-add slip, dropping that course and adding E20.2004. Now, I'm going to call our registration office to be sure that there is no problem about change.

Student: Is this course the same dates?

Caine: Same thing, same dates, same hour of the day. Dr. Caine phones the recording office. Girl in recording office answers the phone. (Girl: 'Recording.') Joan. This is Tom Caine, one of our graduate students in Arts and Sciences registered for E20.1073 which is being given for three points instead of the two. I have been talking with Dr. Dudley about this since she needs this for certification, these three points, and he has made arrangements with Professor Hall for her to enter E20.2004, late, dropping the one and adding the other. She is a graduate

> Arts and Science student, so she has to go back there to do it, doesn't she? (Girl: 'Yes, right.') But I thought that when she arrived you might be raising a question to the lateness of the hour and would need to know about it, (Girl: 'Right.') do you want the student's name? (Girl: 'No, I'll remember.") Fine Thank you.[6]

We have not ended the search nor closed the book on the development of taxonomies in organizational behavior in education. We have begun, however. This study raises many questions for future research. It also provides an excellent platform for future inquiry in the organizational behavior in education.

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[6] Ibid., OTU 75, p. A194-198

CHAPTER III

A DECISION-MAKING BASED TAXONOMY

by Daniel E. Griffiths

The model used as the basis for this taxonomy is decision-making, as described by Griffiths in a number of sources[1] and as modified by the findings of the Development of Criteria of Success in School Administration Project.[2] This theory is an attempt to explain administrative behavior using a set of decision-making concepts and certain assumptions as to the purposes of administrative behavior. A brief statement of the theory follows.

Development of Classification System

Theory

The basic assumptions of this theory are few and relatively simple. The first is that administration is a generalized type of behavior to be found in all human organizations. This assumption merely relates administration to organizations. Without organizations there can be no administration, therefore one must conceptualize about administration in an organizational context. The second assumption is that administration is the process of directing and controlling life in a social organization. This assumption means that administration is the implementation of the purposes for which an organization is designed through such procedures as establishing criteria for the performance of individuals as they live in the organization and establishing controls to make certain that performance agrees with plans. Administration is not an artificial function superimposed on the normal activities of human beings; it is rather the process (cycle of events) engaged in by the members of a social organization in order to control and direct the activities of the members within the organization. Administration occurs whenever the life processes of an organization are being controlled. In contrast to this, it can be said that administration is not the production of the organization. Barnard indicated this quite clearly when he said, "Executive work is not that of the organization, but the specialized work of maintaining the organization in operation."[3] This leads to the next assumption which is that the specific function of administration is to develop and regulate the decision-making process in the most effective manner possible. It is sometimes assumed that the function of the chief executive officer is to make decisions by himself because others are incompetent. This is not the basic assumption of this theory, rather it is the assumption that it is the function of the executive to see to it that the decision process proceeds in an effective manner. (An effective manner is one which results in the accomplishment of a stated objective.) In fact, the executive is called upon to make decisions only when the organization fails to make its own decisions. To put this into other words, if the executive is personally making decisions this means that there exists malfunctioning in the decision process. The executive then needs to correct the malfunctioning. Barnard was referring to this point when he said:[4]

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[1] In particular see Daniel E. Griffiths, Administrative Theory (New York: Appleton-Century-Crofts, 1959).

[2] John Hemphill, Daniel Griffiths, Norman Frederiksen, Administrative Performance and Personality (New York: Teachers College Bureau of Publications, 1962).

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[3] Chester I. Barnard, The Functions of the Executive (Cambridge, Mass. Harvard University Press, 1938), p. 215.

> "It is the organization, not the executive, which does the work on the external environment. The executive is primarily concerned with decisions which facilitate or hinder in the effective or efficient operation of the organization."

It can be seen that this theory looks at the process of administration as being the monitoring of decisions which are made in the organization. It further assumes that the purpose of the behavior of administrators can be understood in terms of either decision-making or the monitoring of decisions made in an organization.

The theory was further developed by formulating a set of steps which were considered to be descriptive of the decision-making process. It was not believed that a decision-maker would go through the process step-by-step, but rather that his behavior in administrative situations could be described by reference to one or more of the steps and that one could predict that his behavior would result in either a decision or in monitoring the decisions of others. The steps:[5]

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[4] Ibid., p. 211.

[5] Griffiths, Administrative Theory, Ibid., p. 94.

1. Recognize, define and limit the problem.
2. Analyze and evaluate the problem.
3. Establish criteria and standards by which the solution will be evaluated or judged as acceptable and adequate to the need.
4. Collect data.
5. Formulate and select the preferred solution or solutions. Test them in advance.
6. Put into effect the preferred solution.
   a. Program the solution.
   b. Control the activities in the program.
   c. Evaluate the results and the process.

This might be considered the "armchair" version of the theory. The next step was taken with the study of the performance of elementary school principals in a simulated situation.[6] One of two secondary factors generated from eight primary factors was very similar to the theoretical conception of the process of decision-making. This factor was named Factor X, Preparation for Decision vs. Taking Final Action and its components and their relation to a revised wording of the decision-making steps are to be found in Table 1. The loadings are between the scoring categories used in the simulation study and Factor X.

Scoring Categories

A set of scoring categories was developed, drawing heavily upon the simulation study and other concepts derived from the expanded theory. The scoring of operational taxonomic units (OTU's) was undertaken, but almost immediately it was concluded that the categories were inadequate. Much of the administrative

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[6] Hemphill, Griffiths, and Frederiksen ibid.

Table 1[7]

STAGES OF DEVELOPMENT OF DECISION TOWARD ACTION

	Stage of Development	Scoring Category	Saturations on Factor X
Preparation	1. Recognizing a problem and the need to prepare to make a decision.	Arrives at a Procedure for Deciding	.69
		Requires Further Information	.63
	2. Preparing for clarification of the problem.	Work Scheduled for Same or Following Day	.61
		Discusses with Subordinates	.60
	3. Initiating work in preparation.	Asks for Information, Opinion, Advice or Permission from Subordinates	.56
		Takes Leading Action	.41
	4. Organizing and judging facts, opinions, and situations.	Conceptual Analysis	.24
		Makes Tentative or Definite Plans Duly	.16
	5. Selecting alternatives.	Delays, or Postpones Decision, or Temporizes	.15
		Follows Lead by Superiors	.09
		Follows Lead by Subordinates	-.10
Action	6. Deciding and acting.	Concluding Decision	-.51
		Takes Terminal Action	-.62

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[7] *Ibid.*, p. 288.

behavior reported in the OTU's was obviously unrelated to decision-making. No statistical analysis of the scoring was done at this point, it was so obvious that the categories were not appropriate that this schema was abandoned. At this point, the researchers returned to the simulation study for further guidance.

Non-decision Activity

It should be noted that some of the behavior reported in OTU's appeared to be pointless or at least, was mere expenditure of energy. There seemed to be no problem, nor was there any obvious purpose to the behavior. At times information was exchanged, given, or received which might or might not be used at some time in the future to solve a problem. With this in mind the second of the two secondary factors resulting from the analysis of responses in the simulation study was examined.[8] It was called Factor Y, Amount of Work Expended in Handling the Item. Nine scoring categories loaded to the extent of .50 on Factor Y:[9]

Estimated Number of Words	.67
Usual Courses of Action	.65
Number of Outsiders Involved Individually	.60
Gives Directions and/or Suggestions	.57
Number of Subordinates Involved Individually	.57
Communicates by Writing	.56
Takes Leading Action	.53
Gives Information to Subordinates	.52
Follows Lead by Superiors	.51

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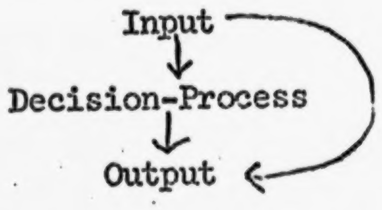
[8] Ibid., pp. 146-147.

[9] Loc. cit.

This factor broadens the range of behavior that must be considered in the description of administrators at work. While Factor X focuses attention upon decision-making behavior, Factor Y reminds us that much that goes on in an organization is best described by use of terms such as expenditure of energy, work, and the like.

Classification System

What framework should then be employed to help in the description of administrator behavior? Each OTU had an input; that is a problem, or an occasion for activity of some sort. The actors had some stimulation to interact with one another. If there was a problem in the OTU, then some type of decision-making ensued. This behavior covered a range from postponing decision to making a final decision. Regardless of whether there was a problem there was always, or so it seemed, an output present. If a decision had been made, then it was implemented in some way. If there was no decision, then information was exchanged and relations maintained. The schema arrived at was a very simple one:



The next question was what categories should be employed in each phase of the schema. The procedure followed was to raise certain descriptive questions such as: What type of problem is involved? What is the nature of the activity being described? What is the source of the problem? etc. Concepts were then employed which were drawn from all relevant research and theory known to the researchers. The result is not a mathematically or systematically pleasing set of categories, but rather one which was a first step towards establishing some relationships among a number of disparate concepts. The schema follows:

Decision-Making Based Classification Schema

I. Input

- A. Type of Problem or Activity
    1. Decision made or specific procedure set for making decision or decision is in process of being implimented
    2. No decision made
    3. Specific organizational task oriented information exchange
    4. Maintaining relations of self and/or organization

- B. Nature of Problem or Activity
    5. Organizational maintenance
    6. Organizational change
    7. Business
    8. Community
    9. Curriculum
    10. Personnel - staff
    11. Personnel - pupil

- C. Central Actor
    - Authority Position
    12. Board
    13. High management
    14. Middle management
    15. Low management
    - Power position compared to source
    16. Lower
    17. Same
    18. Higher

- D. Source of Problem or Activity
    19. Superior
    20. Peer
    21. Subordinate
    22. Outsider
    23. Self

E. Method of Transmission
    24. Face-to-face
    25. Telephone
    26. Writing

F. Feedback Present
    27. Solicited
    28. Unsolicited

II. Decision-Making
  A. Treatment of the Problem
    Delays Treatment
      29. Postpones
    Refers Problem to
      30. Superior
      31. Peer
      32. Subordinate
      33. Outsider
    Makes Immediate Decision
      34. Follows Rule
      35. Follows Precedent
    Follows Lead of
      36. Superior
      37. Peer
      38. Subordinates
      39. Outsider
      40. Makes Decision on other basis
    Arrives at Procedure for Deciding
      What is Done
        41. Seeks Opinions
        42. Determines Data
      Who is to do it
        43. Superior
        44. Peer
        45. Subordinate
        46. Outsider
        47. Self
      By What Means
        48. Conference
        49. Creates Organizational Procedures
        50. Looks up Data
        51. Conducts Research
        52. Receive Communication
        53. Knows Data
        Time Involved in all Procedures
          54. 0-24 hours
          55. 2-14 days
          56. 2-4 weeks
          57. over one month

Number of Procedures
- 58. One Procedure
- 59. Two Procedures
- 60. Three or more Procedures

B. Type of Decision

Occasion of Decision
- 61. Organizational
- 62. Appellate
- 63. Intermediary
- 64. Creative

Orientation toward Structure
- 65. Political
- 66. Non-political

Role Dimension
- 67. Nomothetic
- 68. Transactional
- 69. Idiographic

Finality of Decision
- 70. Terminal
- 71. Series

Range of Action
- 72. One Alternative
- 73. Contingent
- 74. Range

III. Output

A. Implementation of Decision

Informs
- Who
  - 75. Superior
  - 76. Peer
  - 77. Subordinate
  - 78. Outsider
- Method of Transmission
  - 79. Face-to-face
  - 80. Telephone
  - 81. Writing

Explains
- Who
  - 82. Superior
  - 83. Peer
  - 84. Subordinate
  - 85. Outsider
- Method of Transmission
  - 86. Face-to-face
  - 87. Telephone
  - 88. Writing

Carrying Out Decision
  Who
    89. Superior
    90. Peer
    91. Subordinate
    92. Outsider
    93. Self
  How
    94. Uses Existing Structure
    95. Plans New Structure
    96. Plans and Creates New Structure
Control
  97. Sets Deadline
  Requested Feedback Used
    98. Explicit, time definite
    99. Explicit, time indefinite
    100. Implied
  Non-requested Feedback Used
    101. Face-to-face
    102. Telephone
    103. Writing
Incentives
  Universalistic, reward
    104. Praise
    105. Salary Increase
    106. Promotion
    107. Improves Facilities
    108. Other
  Universalistic, punishment
    109. Criticism
    110. Salary stays the same
    111. Demotion
    112. Other
  Particularistic, reward
    113. Praise
    114. Salary Increase
    115. Promotion
    116. Improves Facilities
    117. Other
  Particularistic, punishment
    118. Criticism
    119. Salary stays the same
    120. Demotion
    121. Other

B. Exchange Information and Maintains Relations
  122. Receives Information
  Gives Information to
    123. Superior
    124. Peer
    125. Subordinate
    126. Outsider

- Reasons for giving
    127. Reply to request
    128. Informing
    129. Building Morale
    130. Maintaining Staff Relations
    131. Maintaining Community Relations
- Refers person to ________ for information
    132. Superior
    133. Peer
    134. Subordinate
    135. Outsider
- Type of Information
    136. Opinions
    137. Facts
- Nature of Information
    138. Business
    139. Community
    140. Curriculum
    141. Personnel - staff
    142. Personnel - pupil

Definitions

A set of definitions was prepared for the guidance of the scorers. While not elaborate, it was intended that the definitions be detailed enough to ensure a desirable level of scorer reliability.

Input	An input is a bit of information received by the central actor which generates a problem or activity. Receiving an agenda, or a phone message are examples of inputs.
Decision-making	A decision is a judgment which affects a course of action. This category was scored if 1) a judgment was made in the OTU, 2) a procedure was established by which a judgment would be made, 3) the OTU was concerned with the implementation of a previous decision.

No decision	This category is scored when no judgment is made, no procedure for judging is established, no decision is being implemented, the substance of the OTU is not organizationally task oriented and the activity is not concerned with maintaining relations.
Organizational task	When information is exchanged concerning an organizational task, but no decision is made, decision process initiated or decision implemented this category is scored. An exchange of information between the superintendent and state education department consultant on a new school building is an example.
Maintaining relations	Activities, but not decisions, which tend to enable the central actor or the school district to relate to individuals or organizations significant to their existence are scored here. The monthly meeting of county school executives is an example of the superintendent maintaining relations for himself among his peers.

Organizational maintenance	All activities or decisions relating to the normal functions of the school district are scored here. Employing a teacher, purchasing supplies, and taking attendance are all maintenance behaviors.
Organizational change	This category is scored for all changes in policy, practice, procedures, and rules. Changes in the duties of personnel would also be scored. The introduction of a new program of studies in American history is an example of this category.
Central actor	The central actor is arbitrarily defined as the one on whom the observation focuses. He usually receives the input of the OTU.
Authority position	This refers to the position held in the formal structure. Only four types of positions were used; board, high, middle, and low management. The superintendent is high management, directors are middle, and principals and teachers are low management.
Power position	In the university OTU's the dean of the university summer session is high, the director of the school summer session is

middle, and department chairmen, professors, and secretaries are low management. This category is a comparison of the positions of the central actor and the source of the input. The central actor may be higher, lower, or the same as the source of the input. Those having no position in the formal organization were given a power rating in terms of their roles.

Source of input

The person, group, or organization which originated the input is the source. The sources are designated as 1) superior - holds a higher position in the formal structure.

2) peer - holds a similar position in the formal structure.

3) subordinate - holds a lower position in formal structure.

4) outsider - holds no position in the formal structure.

5) self - the central actor.

Method of transmission	This describes the method by which the input reaches the central actor and may be face-to-face, telephone, or by writing.
Feedback	Feedback is defined as an input which results from a previous decision by the central actor of the OTU. These may be solicited, that is, the result of a direct request or unsolicited, that is, not specifically requested.
Postpones	If the central actor recognizes a problem during the course of an OTU yet delays in making a decision and makes no plans or institutes no procedures toward making a decision, this is scored as postpones.
Follows rule	Makes immediate decision. The decision is made in the course of the OTU. If the central actor makes a decision and uses a written rule as the basis for the decision, this category is applicable.
Follows precedent	This category is used if the central actor makes a decision based upon his (or his advisors) knowledge of previous decisions made in the organization. If this knowledge is in the form of a written rule, score in category above.

Follows lead	This category is scored if the central actor complies or plans to comply with a suggestion or request addressed to him by a superior, peer, subordinate, or outsider.
Makes decision on other basis	This category was not used because all decisions in OTU's were scored in above categories.
Arrives at a procedure for deciding	This category is used when the central actor sets up a procedure through which a decision may be reached. The procedures include seeking opinions informally, looking up data, holding conferences, creating organizational procedures such as designating roles, conducting research, receiving communications, knowing pertinent data.
Occasion for decision	The occasions for decision refer to the place in the organization where the decision is made. It gets at, in effect, the geography of decision-making. Four types of decisions are scored: 1) organizational, those which are made by an individual or group because of organizational assignment, 2) appellate, those which are referred to a superior by a subordinate who would ordinarily make the decision, 3) intermediary, that which are

made to implement a previous decision by a superior, and 4) creative, those which are made by an individual solely by himself and which break with established policy.

Orientation toward structure

Decisions in this set of categories are those which affect the structure and or goals of the organization. Those which do are called *political* and those which do not are called *non-political*.

Role dimension

The way in which the decision-maker views the importance of the organization and the individual are scored in a set of categories: 1) nomothetic, those in which the primary importance is placed upon the organization as the frame of reference in which its decision is made, 2) idiographic, those in which the needs of the individuals are given top priority, and 3) transactional, those in which both the goals of the organization and the needs of individuals are given equal weight.

Finality of decision

This set of categories gets at the decision-maker's expectations as to the finality of his decision. One category is called *terminal* or those in which the decision-maker believes that he has made a final decision and the other, series, or those of which he expects to hear more in the future and will, in all probability, have to modify his original decision.

Range of action

In this set of categories the decision-maker forms the instructions he gives to the implementor. (This is usually discussed in terms of the concept of delegation. Since this concept has been emperically barren the new concept of range of action is being explored.) There are three types of decision implementing concepts: 1) one alternative, in which the decision-maker leaves the implementator no choice of action. He, in essence says, "Do this." 2) Contingent, in which the decision-maker leaves a choice of action to the implementor in which his action will depend, in part, on what he finds as he implements the decision. 3) Range, in which the decision-maker sets forth the parameters within which the implementor can function.

Output

There are two major types of outputs: 1) that which the central actor produces in the form of a decision, and 2) non-decision production in the form of information.

Implementation of decision

Once the decision is made, it becomes an output and implementation may get underway. (There are, of course, decisions which are made, but not implemented.) In the process of implementation the decision-maker may inform a superior, peer, subordinate, and/or outsider of the decision and may use face-to-face, telephone, and/or writing to transmit the information. He may explain the decision to the same types of people using the same set of transmission methods. The decision can be "carried out" by a superior, peer, subordinate, outsider, and/or the decision-maker. Controls are established and incentives applied to make as certain as possible that the decision is implemented as intended by the decision-maker.

Uses existing structures

The decision is implemented using the present structure, that is, the policy, rules, practice, and personnel already existing.

Plans new structure

The decision-maker plans a new or changed structure to implement the decision. The new structure is not completed within the OTU.

Plans and creates new structure	The new structure is both planned and created during the OTU. The change can be minor or major but to be scored it must be established during the OTU.
Control	Control is the concept which the decision-maker employs to determine whether the decision has been implemented. He makes provision for getting information so that he can ascertain whether or not the decision has been implemented.
Sets deadline	The decision-maker sets a specific time for the implementation of the decision.
Feedback	The concept of feedback is defined as information concerning the results of the decision. There can be both *requested* and *non-requested* feedback. Within the concept of requested feedback it can be explicit that a *definite* or *indefinite* time be set for the feedback to occur. There can also be *implied* feedback which would be suggested by the dialogue.
Incentives	As the decision-maker makes decisions and wants them implemented, he uses incentives of various sorts. There are two general types of incentives: 1) *universalistic*,

that is, those applied according to written policies and rules and 2) particularistic, that is, those applied on a personal basis without written rules or policies. In both categories there are some incentives generally viewed to be rewards and others viewed as punishments.

Scoring

All OTU's were scored independently by two graduate students trained in the use of the scoring definitions and were checked by a senior researcher. Differences were discussed and a single score was arrived at for each category. The system of scoring was essentially a "go-no-go" one in which each OTU was read and it was determined as to whether each scoring category was present or absent.

Two OTU's are scored in this chapter to demonstrate how scoring took place. A large scoring sheet was used with the number of the OTU's on the left and the numbers of the scoring categories on the top. A 1 was entered in each cell for each category present in an OTU. Only one 1 was recorded regardless of the number of times the category might have occurred.

The first OTU scored is No. 1 which took place in Central District and concerns an interview with a candidate for a teaching position.[10]

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[10] See Chapter III, "The Field Study" for the complete text of this OTU.

The categories used to score OTU No. 11 are:

1, 5, 10, 13, 18, 22, 24, 27, 41, 47, 52, 54, 125, 127, 135, 136, 138, 140.

The description of the OTU in terms of the scoring categories follows:

I. Input

A. Type of Problem or Activity
1. Specific procedure set for making decision

B. Nature of Problem or Activity
5. Organizational maintenance
10. Personnel - staff

C. Central Actor
Authority Position
13. High management
Power Position compared to source
18. Higher

D. Source of Problem or Activity
22. Outsider

E. Method of Transmission
24. Face-to-face

F. Feedback Present
27. Solicited

II. Decision-Making

A. Treatment of Problem

Arrives at a Procedure for Deciding

What is done?
41. Seeks opinions
Who is to do it?
47. Self
By what means?
52. Receive communication
Time involved in all procedure
54. 0-24 hours
Number of procedures

III. Output

B. Exchange Information and Maintains Relation

Gives information to
125. Subordinate
Reasons for giving
127. Reply to request

Refers person to 135. Outsider for information
Type of information
136. Opinions
Nature of information
138. Business
140. Personnel - staff

The second OTU scored is No. 75, which is from Urban University. The problem concerns the need of a student to change her program so as to be eligible for certification. The scoring categories used are:

1, 5, 11, 13, 18, 21, 24, 28, 38, 42, 47, 48, 54, 58, 61, 66, 68, 70, 72, 77, 78, 79, 80, 84, 86, 87, 91, 92, 93.

I. Input

A. Type of Problem or Activity
1. Decision made

B. Nature of Problem or Activity
5. Organizational maintenance
11. Personnel - pupil

C. Central Actor
13. High management
Power position compared to source
18. Higher

D. Source of Problem or Activity
21. Subordinate

E. Method of Transmission
24. Face-to-face

F. Feedback Present
28. Unsolicited

II. Decision-Making

A. Treatment of the Problem
Follows Lead of
38. Subordinate
Arrives at a Procedure for Deciding
42. Determines data
Who is to do it?
47. Self
By what means?
48. Conference
Time involved
54. 0-24 hours
58. One procedure

B. Type of Decision

Occasion of decision
61. Organizational
Orientation toward structure
66. Non-political
Role dimension
68. Transactional
Finality of decision
70. Terminal
Range of action
72. One alternative

III. Output

A. Implementation of Decision

Informs
Who
77. Peer
78. Outsider
Method of transmission
79. Face-to-face
80. Telephone
Explains
Who
84. Subordinate
Method of Transmission
86. Face-to-face
87. Telephone
Carrying out decision
Who
91. Subordinate
92. Outsider
93. Self

Analysis of Data

Once all OTU's were scored, several types of analysis were performed: frequency counts of used and unused categories, cluster formation, and content analysis of clusters.

Frequency Counts of Categories Used

It is of interest to know which scoring categories actually were useful in describing the OTU's since it was assumed that all were of value. Table II presents the rank order and the number of times the categories were used.

TABLE II

Rank Order, Number, and the Frequency of Use of Scoring Categories

Rank Order	Number of Scoring Category	Frequency Of Use	Rank Order	Number of Scoring Category	Frequency Of Use
1	18	78	18.5	137	27
2	5	75	18.5	70	27
3	24	71	18.5	10	27
4	21	57	22	3	26
5	1	47	22	22	26
6	136	45	22	8	26
7	13	38	24.5	72	24
8	127	37	24.5	77	24
9	14	36	26.5	91	22
10.5	135	31	26.5	79	22
10.5	93	31	28	11	21
12	124	30	29.5	138	19
14	121	29	29.5	139	19

TABLE II (Continued)

Rank Order, Number, and the Frequency of Use of Scoring Categories

Rank Order	Number of Scoring Category	Frequency of Use	Rank Order	Number of Scoring Category	Frequency of Use
14	61	29	32	9	18
14	66	29	32	68	18
16	28	28	32	140	18
18.5	7	27	34.5	125	17
			34.5	126	17
37	6	14	61	58	7
37	25	14	61	62	7
37	86	14	61	71	7
39.5	54	13	61	78	7
39.5	84	13	61	116	7
41.5	27	12	61	129	7
41.5	48	12	66.5	2	6
45.5	141	11	66.5	26	6
45.5	130	11	66.5	59	6
45.5	67	11	66.5	87	6

TABLE II (Continued)

Rank Order, Number, and the Frequency of Use

of Scoring Categories

Rank Order	Number of Scoring Category	Frequency of Use	Rank Order	Number of Scoring Category	Frequency of Use
45.5	45	11	71.5	16	5
45.5	42	11	71.5	23	5
45.5	4	11	71.5	35	5
50.5	40	10	71.5	52	5
50.5	47	10	71.5	65	5
50.5	80	10	71.5	73	5
50.5	142	10	75.5	69	4
53.5	12	9	75.5	74	4
53.5	41	9	80.5	19	3
56	15	8	80.5	29	3
56	38	8	80.5	34	3
56	133	8	80.5	39	3
61	17	7	80.5	85	3
80.5	92	3			

TABLE II (Continued)

Rank Order, Number, and the Frequency of Use

of Scoring Categories

Rank Order	Number of Scoring Category	Frequency of Use	Rank Order	Number of Scoring Category	Frequency of Use
80.5	98	3			
80.5	122	3			
89.5	32	2			
89.5	50	2			
89.5	55	2			
89.5	94	2			
89.5	96	2			
89.5	97	2			
89.5	112	2			
89.5	120	2			
89.5	123	2			
89.5	128	2			
100	30	1			
100	46	1			

TABLE II (Continued)

Rank Order, Number, and the Frequency of Use

of Scoring Categories

Rank Order	Number of Scoring Category	Frequency of Use	Rank Order	Number of Scoring Category	Frequency of Use
100	57	1			
100	60	1			
100	75	1			
100	81	1			
100	82	1			
100	99	1			
100	107	1			
100	113	1			
100	132	1			

Scoring Categories Not Used

Thirty-seven of the scoring categories were not used at all. Some of the categories were not appropriate, for example, since in the school OTU's the chief actor was the top administrator, he had no peer. Categories in the Control section of categories was largely unused. Categories describing creative acts were also largely unused. Table III lists the unused categories by number and short name.

TABLE III

Categories Not Used in Scoring OTU's

Number	Short Name
20	Peer
31	Peer
33	Outsider
36	Superior
37	Peer
43	Superior
44	Peer
49	Creater Organizational Procedures
51	Conducts Research
53	Knous Datu
56	2-4 weeks
63	Intermediary
64	Creative
76	Peer
83	Peer
88	Writing
89	Superior
90	Peer
95	Plans New Structure
100	Implied
101	Face-to-face
102	Telephone
103	Writing
104	Praise
105	Salary Increase
106	Promotion
108	Other
109	Criticism
110	Salary stays the same
111	Demotion
114	Salary increase
115	Promotion
117	Other
118	Criticism
119	Salary stays the same
132	Superior
134	Subordinate

Cluster Formation

As Deutsch has pointed out:
"Theories, taxonomies, models, and schemes for information classification and retrieval all are alike in one important aspect. They are devices for putting items of information into the context of other items."[11] In an attempt to determine the context in which the OTU's could be considered a technique called "cluster formation" was used. In this technique all the OTU's were compared with one another to determine similarity of their scoring categories. The assumption was that groups of OTU's will emerge that can be scored by the same categories. Three clusters were found having at least 90% agreement with another OTU and two clusters having 75 to 90% agreement. Since one of the 75% clusters included 86 OTU's, it was not kept in this analysis. The clusters are groups of OTU's which can be described by essentially the same scoring categories and so are considered to be classes of organizational behavior. The clusters and their scoring categories follow.

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[11] Karl W. Deutsch, "On Theories, Taxonomies, and Models As Communication Codes for Organizing Information," Behavioral Science, Vol. II, No. 1, Jan. 1966, pp. 1-17.

Cluster #1 - OTU's Having 90% or Better

Agreement With OTU # 12

OTU Number	12	9	10	11	14	32	36	42	50	51	57	60	64	65	72	83	89
					1												
							2										
	3	3	3	3		3		3	3	3	3	3	3	3	3	3	3
	5	5	5		5	5	5	5	5	5	5		5	5	5	5	5
				6			6					6					
	7	7			7	7	7	7	7		7			7			7
			8		8			8									
				9		9									9	9	
		10		10					10	10			10		11		
		13			13				13	13					13		13
						14	14				14	14	14	14		14	
	15		15	15				15									
	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	21	21	21	21	21	21	21	21	21	21		21	21	21	21	21	
	24	24	24	24	24	24	24	24	24	24	22	24	24	24	24	24	22 24
					25			27			27						
		28					28			28				28	28	28	28
							29										
					91												
					93												
					120												
						121			121		121	121	121	121	121	121	121
	124	124	124	124	124		124		124	124		124	124	124	124	124	
																	125
		126					126						126				126
	127		127	127	127				127	127	127	127	127	127	127	127	
			129									129					
			130														
		133				135	135					135				135	
	136	136	136	136	136		136		136	136	136	136	136	136	136		136
	137	137			137	137			137		137		137	137			137
			138		138		138										
			139	139		139						139			139	139	
		140		140						140			140				
															141		

Cluster #2 - Having 90% or Better Agreement
With OTU #16

OTU Number	16	8	25	86	90
		3			
	4		4	4	4
	5	5	5	5	5
					8
	10	10	10	10	
			12		
	13	13			13
				14	
	18	18	18	18	18
	21	21	21	21	21
			22		
	24	24	24	24	24
		27			
					28
			116		
		121			
	125	125		125	125
		126		126	126
		127			
	128	128			
	129	129		129	
					130
	135	135			
		136	136	136	
		137			
				138	
	140	140	140		
					141

Cluster #3 - OTU's Having 90% Agreement

With OTU #3

OTU Number	3	6	13	27
				3
	4	4	4	
	5	5	5	5
	8	8	8	8
	13	13	13	13
			16	
	17	17		17
	22	22	22	22
	24	24	24	24
	120			
	121		121	121
	124	124		
	125	125	125	125
				126
	127	127	127	127
	130		130	
	135	135	135	135
	136		136	136
	137			137
	138	138	138	
	139			
	140			140
			141	

Cluster #4 - OTU's Having 75% Agreement

With OTU #75

OTU Number	75	4	34	52
	1	1	1	1
	5	5	5	
				6
				9
		10		
	11		11	
	13	13		13
			14	
	18	18	18	18
	21			21
		22		
			23	
	24	24		24
				27
	28	28	28	
	38			
			40	
		41		41
	42			42
		45		
	47	47		47
	48	48		48
		52		
	54	54		54
	58			58
		59		
	61	61	61	61
				65
	66	66	66	
			67	
	68	68		68
	70	70	70	
				71
	72	72		72
			74	
			77	77
		78		
		79	79	79
			84	
			86	
			91	
		92		
		93	93	
			96	
		98		
		112		
		113		
		116		
			142	142

Each cluster was examined using a non-statistical visual factor analysis approach. The dominant scoring categories were identified and each cluster was named. The clusters, their dominant scoring categories, and names follow.

Cluster No. I

Exchanging Information

Scoring Category #	Scoring Category Name
3	Specific organizational task oriented information exchange
5	Organizational maintenance
7	Nature of problem or activity - business
18	Power position of central actor compared to source - higher
21	Source of problem or activity - subordinate
24	Method of transmission - face-to-face
124	Gives information to peer
136	Type of information - opinion

Cluster #2

Responding to Subordinates

Scoring Category #	Scoring Category Name
4	Type of problem or activity - maintaining relation of self or organization
5	Nature of problem or activity - organizational maintenance
10	Nature of problem or activity - personnel - staff
18	Central actor - power position compared to source - higher
21	Source of problem or activity - subordinate
24	Method of transmission - face-to-face
125	Gives information to subordinate

3

Cluster #3

Responding to Outsiders

Scoring Category #	Scoring Category Name
5	Problem or activity - organizational maintenance
8	Nature of problem or activity - community
13	Central actor - high management
22	Source of problem or activity - outsider
24	Method of transmission of problem or activity - face-to-face
125	Gives information to subordinate
127	Reason for giving - reply to request
135	Refers person to outsider

Cluster #4

Decision-Making

Scoring Category #	Scoring Category Name
1	Decision made or specific procedure set for making decision or decision is in the process of being implemented
5	Problem or activity - organizational maintenance
13	Central Actor - high management
18	Power position compared to source - higher
24	Method of transmission -(problem) - face-to-face
28	Feedback present - unsolicited
47	Arrives at procedure for deciding, Who is to do it - self
48	By what means - conference
54	Time involved in all procedures - 0-24 hours
61	Occasion for decision - organizational
66	Orientation toward structure - non-political
68	Role dimension - transactional
70	Finality of decision - terminal
72	Range of action - one alternative
79	Method of transmitting decision - face-to-face

The approach employed in this chapter resulted in four clusters or sets of OTU's; three of which are information exchange and one of which is decision-making. A classification table was then constructed.

TABLE IV

Classification of OTU's

Cluster #	1	2	3	4
OTU's	9	8	3	4
	10	16	6	34
	11	25	13	52
	12	86	27	75
	14	90		
	32			
	36			
	42			
	50			
	51			
	57			
	60			
	64			
	65			
	72			
	83			
	89			

The next step was to study the relationship between the OTU's classified about and the unclassified OTU's. It was found that there were OTU's which there was 90% agreement of scoring categories. Those OTU's which had 90% agreement were classified as members of the clusters with which their scoring categories agreed. Exception to this occurred when an OTU which was in a cluster in the first classification (above) appeared again because of a 90% agreement of its scoring categories. Eleven additional OTU's were classified using this approach. A total of 41 OTU's were classified using the approach employed in this chapter. The final classification is contained in Table V.

TABLE V

Classification of OTU's by Decision Theory

Cluster #1	Cluster #2	Cluster #3	Cluster #4
9, 10, 11, 12, 14 32, 36, 42, 50, 51 57, 60, 64, 65, 72 83, 89	8, 16, 25, 89, 90	3, 6, 13, 27	4, 34, 52, 75
71, 77, 79, 86	7, 21, 27, 29, 71 86	48, 68, 84	

A total of 43 OTU's were classified and only two fell into two clusters. It is rather obvious that the four clusters do not constitute all of the possible groupings of OTU's, but it does appear that they are the groupings which emerge from the decision theory employed in this chapter.

CHAPTER IV

A TAXONOMY OF ORGANIZATIONAL BEHAVIOR BASED ON COMPLIANCE THEORY

Stephen P. Hencley and George A. Chambers

The taxonomy of organizational behavior outlined in this chapter was derived primarily from compliance theory--as enunciated in recent works by Amatai Etzioni.[1] Although this theory does not appear to have had wide currency in the field of educational administration, the writers were impressed with its potential for providing a powerful initial structure from which a taxonomy might be constructed. Initial impressions about the theory's potential proved valid as work proceeded. The theory appeared to meet the criteria of utility, relevance, and power in generating useful taxonomic categories for classifying organizational behavior. Although it was necessary ultimately, to go beyond the basic theory in developing the final form of the taxonomy, the theory proved consistently useful in suggesting avenues for further development.

COMPLIANCE THEORY

What, then, is compliance theory? And what is the nature of compliance in organizations? Etzioni defines compliance as a relationship consisting of the power employed by superiors to control subordinates, and the orientation of the subordinates to this power. Thus, he sees compliance as encompassing a structural and a motivational aspect; structural since there is concern for the distribution of power in organizations; motivational since there is concern for the differential commitments of actors to organizations.

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[1] See Amatai Etzioni, *A Comparative Analysis of Complex Organizations*, New York: The Free Press of Glencoe, Inc., 1961) and also Etzioni's *Modern Organizations*, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964).

The articulation of the social system and the personality system reflected in this combination is seen by Etzioni as an essential element in the analysis of organizational behavior.

Structural Aspects

The structural aspects of Etzioni's theory are concerned with 1) the kinds of power used in organizations, and 2) the ways in which power is distributed. Power itself refers to the ability of an actor in an organization to induce or to influence other actors to carry out his directives or any other norms he supports. Since physical, material, and symbolic rewards or deprivations are seen by Etzioni as the means that are manipulated to support directives, his theory posits three types of organizational power: a) coercive, b) utilitarian and c) normative.

Coercive power rests on the application, or the threat of application of physical sanctions such as infliction of pain; generation of frustration through restriction of movement; and control of need satisfaction through force. Utilitarian power is based on control over material resources and rewards through allocation of salaries and wages, fringe benefits, services, and commodities. Normative power is based on the manipulation of esteem, prestige, and ritualistic symbols, as well as on allocation of acceptance and positive response. These three types of power are seen by Etzioni as being distributed in various ways among organizational elites, i.e., among incumbents of power positions. Thus, organizational elites are viewed as being less subordinated in the organization, and as having greater commitment and performance obligations than other organizational members.

Motivational Aspects

The motivational aspects of the theory illuminate the differential involvements of organizational participants in on-going organizational activities. Etzioni has suggested three kinds of involvement that characterize the orientations of lower participants to the power exercised by elites: alienative, calculative and moral. Alienative involvement designates an intense, negative orientation; calculative involvement a negative or positive orientation of low intensity; and moral involvement a positive orientation of high intensity. When one or another of the motivational aspects is coupled with any one of the structural aspects, a compliance relationship is formed. The nine compliance combinations suggested by Etzioni are shown in Chart 1.[2]

Chart 1
Etzioni's Compliance Relationships

Types of Power	Involvement: Alienative	Calculative	Moral
Coercive	1	2	3
Utilitarian	4	5	6
Normative	7	8	9

Three of the compliance relationships (1, 5, 9) are congruent[3]; all others are non-congruent. Etzioni has stated that congruent compliance relationships enhance organizational effectiveness. Hence, organizations strive to move from non-congruent compliance relationships toward the following congruent types: coercive-alienative, utilitarian-calculative, normative-moral. To summarize, compliance is viewed by Etzioni a) as a universal phenomenon in organizations, b) as possessing both structural and motivational aspects, and c) as the salient component of the relationship between organizational elites and lower participants.

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[2] Etzioni, *op. cit.*, p. 12.

[3] "Congruent" in the sense that different types of power tend to evoke complementary forms of compliance. In prisons, for example, coercive power tends to evoke alienative involvement on the part of inmates.

Additional Components of the Theory

Compliance appears to be related to many other organizational variables: to the goals organizations pursue; to the kind, location, and interaction of their elites; to the levels and kinds of consensus attained, and to the communications and socialization used to attain them; to recruitment, scope, and pervasiveness; to the distribution and control of charismatic participants; and to the way tasks and power are allocated over time.

Eventually, a complete theory will order and encompass all such variables into a coherent whole from which the truly universal propositions of organizational behavior will be deducible. In the meantime, study and analysis of the range of variables offered in Etzioni's theory suggested two (in addition to power and involvement) that appeared highly useful as building blocks from which classifications could be generated, i.e., organizational goals and organizational tasks.

Etzioni's theory suggests that the goals of organizations may be encompassed under three headings: order, economic and culture. The tasks of organizations, on the other hand, may be posited as routine, instrumental, and expressive. The order goals of organizations are those which are oriented toward the control of actors who are (1) deviants in the eyes of the organization, (2) deviants in the eyes of some social unit the organization is serving, or (3) non-deviants in the eyes of the organization. Economic goals are those which are related to increasing or maintaining the output of services or commodities. Culture goals are oriented toward the institutionalization of conditions needed for the creation and preservation of symbolic objects, their application, and the creation or reinforcement of commitments to such objects.

The task dimensions of organization may be similarly defined under three headings: expressive, instrumental, and routine. Expressive tasks are oriented toward defining, legitimizing and obtaining commitment to broad policies or ends that are to guide the organization's mission or missions. Instrumental tasks encompass activities oriented toward defining, legitimizing, and obtaining commitment to means that are to be used or permitted in pursuit of broad policies. Routine tasks are organizational activities which are oriented toward the implementation of means.

With the addition of a goal component and a task component to the central compliance dimension, four major components of organization became available for constructing taxonomic schemes: 1) the kinds of goals pursued and seen as legitimate in the organization, 2) the kinds of power used or permitted, 3) the characteristics or modal nature of the involvement in the organization, and 4) the nature of the tasks in the organization.

THE TAXONOMY

— first letter caps only

The selection of four major components (goals, power, involvement, task) as bases from which to generate a taxonomy of organizational behavior represented a significant step in setting its final form. Four other steps that appeared necessary to the development of the taxonomy were as follows:

1) to delineate the basic attributes of the four components selected from the theory,
2) to develop a scheme for generating the classes of organizational behavior that might be expected (as indicated in Chart 3, to follow),
3) to develop a detailed codification system (based on the components and their attributes) to facilitate more exact classification of organizational behavior, (as indicated in the enlarged taxonomy, to follow),

4) to define all major terms and concepts in the taxonomic system.

Attributes of Components

The delineation of the basic attributes of the four major components selected was relatively simple: Etzioni's theory was quite explicit on this matter. The goals of organization were defined in the theory as order goals, economic goals, or culture goals. The kinds of power used in organization were characterized as coercive, utilitarian, or normative. The types of organizational involvement postulated were alienative, calculative, or moral. Organizational tasks were defined as expressive or instrumental. With the addition of routine tasks as another attribute of the task component, the conceptual scheme to be used in generating further classifications was complete. The components and attributes derived from compliance theory are summarized in Chart 2.

Chart 2
Components and Attributes Derived From Compliance Theory

	Attribute		
Component	1.	2.	3.
Goal	Order (O)	Economic (Ec)	Culture (Cu)
Power	Coercive (Co)	Utilitarian (U)	Normative (N)
Involvement	Alienative (A)	Calculative (Ca)	Moral (M)
Task	Routine (R)	Instrumental (I)	Expressive (Ex)

Generating Classes of Organizational Behavior

Following selection of the major components and definition of their attributes, attention was directed toward finding an answer to the following question. What theoretical classes of organizational behavior could be generated from the components and attributes shown in Chart 2? The important decisional determinants that entered into resolution of this question were as follows:

1. All units of organizational behavior derived from various organizational settings would be described in terms of each of the major theoretical components (goals, power, involvement, task).

2. Only one of the three attributes for each of the four components would be utilized in classifying a given behavioral unit. Goal, for example, would be scored as either order, or economic, or culture--dependent upon which of these three attributes received major emphasis in the unit under consideration. Each of the other three components would be scored in the same manner. Thus, a unit of organizational behavior in which the goal was order, the power coercive, the involvement alienative, and the task routine would be classified as an OCoAR unit of behavior. Similarly, if the goal were culture, the power utilitarian, the involvement moral, and the task routine, the unit of behavior would be classified as CuUMR.

Operationally, the application of the foregoing decisional determinants led to the following conclusions:

a) the universe of theoretical classes of organizational behavior consisted of all possible combinations of the attributes postulated for each of the four major components in Chart 2.

b) the number of theoretical classes of organizational behavior postulated was 3^4 or 81. The eighty-one theoretical classes of organizational behavior are depicted in Chart 3.

At this writing, there is no reason to suppose that every class of organizational behavior actually exists. Nor can it be predicted that even a majority of them will be identified in educational settings. The important point is that the theory leads one to suspect the existence of each of the classes. Thus, Chart 3 provides valuable guidelines for subsequent empirical tests of the general theory.

Chart 3
THEORETICAL CLASSES OF ORGANIZATIONAL BEHAVIOR DERIVED FROM COMPLIANCE THEORY

Goal	Power	Involvement	Task		Goal	Power	Involvement	Task		Goal	Power	Involvement	Task
O	Co	A	R		Ec	Co	A	R		Cu	Co	A	R+
O	Co	A	I		Ec	Co	A	I		Cu	Co	A	I
O	Co	A	Ex		Ec	Co	A	Ex		Cu	Co	A	Ex
O	Co	Ca	R		Ec	Co	Ca	R		Cu	Co	Ca	R+
O	Co	Ca	I		Ec	Co	Ca	I		Cu	Co	Ca	I
O	Co	Ca	Ex		Ec	Co	Ca	Ex		Cu	Co	Ca	Ex
O	Co	M	R		Ec	Co	M	R		Cu	Co	M	R+
O	Co	M	I		Ec	Co	M	I		Cu	Co	M	I
O	Co	M	Ex		Ec	Co	M	Ex		Cu	Co	M	Ex
O	U	A	R		Ec	U	A	R		Cu	U	A	R+
O	U	A	I		Ec	U	A	I		Cu	U	A	I
O	U	A	Ex		Ec	U	A	Ex		Cu	U	A	Ex
O	U	Ca	R		Ec	U	Ca	R		Cu	U	Ca	R+
O	U	Ca	I		Ec	U	Ca	I		Cu	U	Ca	I
O	U	Ca	Ex		Ec	U	Ca	Ex		Cu	U	Ca	Ex
O	U	M	R		Ec	U	M	R		Cu	U	M	R+
O	U	M	I		Ec	U	M	I		Cu	U	M	I
O	U	M	Ex		Ec	U	M	Ex		Cu	U	M	Ex
O	N	A	R		Ec	N	A	R		Cu	N	A	R+
O	N	A	I		Ec	N	A	I		Cu	N	A	I
O	N	A	Ex		Ec	N	A	Ex		Cu	N	A	Ex
O	N	Ca	R		Ec	N	Ca	R		Cu	N	Ca	R+
O	N	Ca	I		Ec	N	Ca	I		Cu	N	Ca	I
O	N	Ca	Ex		Ec	N	Ca	Ex		Cu	N	Ca	Ex
O	N	M	R		Ec	N	M	R		Cu	N	M	R+
O	N	M	I		Ec	N	M	I		Cu	N	M	I
O	N	M	Ex		Ec	N	M	Ex		Cu	N	M	Ex

The Enlarged Taxonomy

→ Center and underlined

The eighty-one classes of organizational behavior described above appeared very useful for broad, global classifications of organizational behavior. However, they were less useful for generating precise, highly discriminating classifications. Since both types of classifications appeared to have value in terms of organizational behavior, work was initiated toward enlargement of the taxonomic scheme presented in Chart 2.

Development of an expanded taxonomy proceeded through several stages. First, it was necessary to search the literature pertaining to organizations to identify characteristics that appeared related to the major components and attributes presented in Chart 2.[4] Second, the characteristics that appeared most useful for classification purposes needed to be identified. Third, the characteristics selected had to be arranged hierarchically under each component and attribute. The expanded taxonomy that was derived through this process appeared to have sufficient discriminating power for generating precise classifications of organizational behavior.

The enlarged taxonomy follows:

100.00	GOALS
110.00	Order goals
111.00	Control of deviants
111.10	hierarchical
111.11	individual with individual
111.12	individual with group/s
111.13	group/s with group/s
111.20	peer
111.21	individual with individual
111.22	individual with group/s
111.23	group/s with group/s

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[4] The characteristics listed under culture goals, for example, were derived entirely from a study of the task of public education conducted at the University of Chicago. See Lawrence Downey, The Task of Public Education (Chicago: Midwest Administration Center, University of Chicago, 1960).

112.00	Control of nondeviants
112.10	hierarchical
112.11	individual with individual
112.12	individual with group/s
112.13	group/s with group/s
112.20	peer
112.21	individual with individual
112.22	individual with group/s
112.23	group/s with group/s
120.00	Economic goals
121.00	Increasing services or commodities
121.10	financial support
121.11	capital goods
121.12	consumable goods
121.13	human resources
121.20	operating efficiency
121.21	capital goods
121.22	consumable goods
121.23	human resources
122.00	Maintaining services or commodities
122.10	financial support
122.11	capital goods
122.12	consumable goods
122.13	human resources
122.20	operating efficiency
122.21	capital goods
122.22	consumable goods
122.23	human resources
130.00	Culture goals
131.00	Intellectual
131.10	possession of knowledge
131.20	communication of knowledge
131.30	creation of knowledge
131.40	desire for knowledge
132.00	Social
132.10	man-to-man relationships
132.20	man-to-state relationships
132.30	man-to-country relationships
132.40	man-to-world relationships
133.00	Personal
133.10	physical health
133.20	mental health
133.30	moral integrity
133.40	cultural and leisure pursuits
134.00	Productive
134.10	vocational information and guidance
134.20	vocational training and placement
134.30	homemaking and family training
134.40	management of personal finances

200.00	POWER
210.00	Coercive power
211.00	status-derived
211.10	intraorganizational
211.20	interstitial
211.30	extraorganizational
212.00	competence-derived
212.10	intraorganizational
212.20	interstitial
212.30	extraorganizational
213.00	charisma-derived
213.10	intraorganizational
213.20	interstitial
213.30	extraorganizational
220.00	Utilitarian power
221.00	status-derived
221.10	intraorganizational
221.20	interstitial
221.30	extraorganizational
222.00	competence-derived
222.10	intraorganizational
222.20	interstitial
222.30	extraorganizational
223.00	charisma-derived
223.10	intraorganizational
223.20	interstitial
223.30	extraorganizational
230.00	Normative power
231.00	status-derived
231.10	intraorganizational
231.20	interstitial
231.30	extraorganizational
232.00	competence-derived
232.10	intraorganizational
232.20	interstitial
232.30	extraorganizational
233.00	charisma-derived
233.10	intraorganizational
233.20	interstitial
233.30	extraorganizational
300.00	INVOLVEMENT
310.00	Alienated involvement
311.00	Formal organization
311.10	hierarchical
311.11	needs
311.12	values
311.20	peer
311.21	needs
311.22	values

312.00	Primary groups
312.10	hierarchical
312.11	needs
312.12	values
312.20	peer
312.21	needs
312.22	values
320.00	Calculative involvement
321.00	Formal organization
321.10	hierarchical
321.11	needs
321.12	values
321.20	peer
321.21	needs
321.22	values
322.00	Primary groups
322.10	hierarchical
322.11	needs
322.12	values
322.20	peers
322.21	needs
322.22	values
330.00	Moral involvement
331.00	Formal organization
331.10	hierarchical
331.11	needs
331.12	values
331.20	peer
331.21	needs
331.22	values
332.00	Primary groups
332.10	hierarchical
332.11	needs
332.12	values
332.20	peer
332.21	needs
332.22	values
400.00	TASKS
410.00	Expressive tasks
411.00	Goal-derived policy setting
411.10	order goal policies
411.20	economic goal policies
411.30	cultural goal policies
412.00	Normative integration
412.10	hierarchical consensus
412.11	goal derived policies
412.12	general values
412.13	cognitive perspectives

412.20 peer consensus
412.21 goal-derived policies
412.22 general values
412.23 cognitive perspectives
413.00 Social integration
413.10 hierarchical cohesion
413.11 cooperation
413.12 commitment
413.13 need satisfaction
413.14 stability
413.20 peer cohesion
413.21 cooperation
413.22 need satisfaction
413.23 commitment
413.24 stability

420.00 Instrumental tasks
421.00 Organizational means policy-setting
421.10 to effect order goal policies
421.20 to effect economic goal policies
421.30 to effect cultural goal policies
422.00 Normative integration
422.10 hierarchical consensus
422.11 means policies
422.12 formal structure requirements
422.13 role structure requirements
422.14 role expectation requirements
422.15 authority requirements
422.16 responsibility requirements
422.17 technical requirements
422.18 performance requirements
422.19 achievement requirements
422.20 peer consensus
422.21 means policies
422.22 formal structure requirements
422.23 role structure requirements
422.24 role expectation requirements
422.25 authority requirements
422.26 responsibility requirements
422.27 technical requirements
422.28 performance requirements
422.29 achievement requirements
423.00 Social integration
423.10 hierarchical cohesion
423.11 cooperation
423.12 commitment
423.13 need satisfaction
423.14 stability
423.20 peer cohesion
423.21 cooperation
423.22 commitment
423.23 need satisfaction
423.24 stability

430.00 Routine tasks
431.00 Programing instruction and curriculum functions
431.10 program for establishing curricular content
431.11 program for establishing curricular organization
431.12 program for selecting curricular materials
431.13 program for relating curriculum to time
431.14 program for relating curriculum to facilities
431.15 program for relating curriculum to personnel
431.16 program for articulating existing programs
431.17 program for exceptional children
431.18 program for remedial instruction
431.19 program for testing
431.20 program for instructional improvement
431.21 program for diagnosing pupil learning difficulties
431.22 program for adult education
431.23 program for use of instructional equipment
431.24 program for research and experimentation on instruction and curriculum

432.00 Programing staff personnel functions
432.10 program for recruitment of professional staff personnel
432.11 program for selection of professional staff personnel
432.12 program for induction of professional staff personnel
432.13 program for orientation of professional staff personnel
432.14 program for scheduling of professional staff personnel
432.15 program for supervision of professional staff personnel
432.16 program for evaluation of professional staff personnel
432.17 program for promotion of professional staff personnel
432.18 program for retention of professional staff personnel
432.19 program for dismissal of professional staff personnel
432.20 program for in-service education of professional staff personnel
432.21 program for dealing with irregularities in relation to professional staff personnel
432.22 program for recruitment of nonprofessional staff personnel
432.23 program for selection of nonprofessional staff personnel
432.24 program for induction of nonprofessional staff personnel
432.25 program for orientation of nonprofessional staff personnel
432.26 program for scheduling of nonprofessional staff personnel
432.27 program for supervision of nonprofessional staff personnel
432.28 program for evaluation of nonprofessional staff personnel
432.29 program for promotion of nonprofessional staff personnel
432.30 program for retention of nonprofessional staff personnel
432.31 program for dismissal of nonprofessional staff personnel
432.32 program for in-service education of nonprofessional staff personnel
432.33 program for maintenance of staff personnel records
432.34 program for obtaining substitute teachers
432.35 program for scheduling substitute teachers
432.36 program for research and experimentation in staff personnel area

433.00 Programing pupil personnel functions
433.10 program for orientation of pupils
433.11 program for scheduling of pupils
433.12 program for pupil counselling
433.13 program for student health
433.14 program for student attendance

433.15 program for student census
433.16 program for student records
433.17 program for student guidance
433.18 program for assessing student progress
433.19 program for student activities
433.20 program for occupational information services
433.21 program for educational information services
433.22 program for placement services
433.23 program for follow-up services
433.24 program for dealing with pupil irregularities
433.25 program for applying extreme measures to pupils
433.26 program for research and experimentation in pupil personnel area

434.00 Programing finance and business management functions
434.10 program for budget construction
434.11 program for budget control
434.12 program for budget administration
434.13 program for debt service administration
434.14 program for payroll administration
434.15 program for supervising internal accounts
434.16 program for auditing internal accounts
434.17 program for insurance administration
434.18 program for specifications for equipment
434.19 program for specifications for supplies
434.20 program for purchasing equipment
434.21 program for purchasing supplies
434.22 program for distributing equipment
434.23 program for distribution supplies
434.24 program for inventorying equipment
434.25 program for inventorying supplies
434.26 program for handling state and/or federal support programs
434.27 program for research and experimentation in relation to finance and business management
434.28 program for preparation of financial reports

435.00 Programing school plant and services functions
435.10 program for plant planning
435.11 program for plant construction
435.12 program for plant operation
435.13 program for plant maintenance
435.14 program for grounds maintenance
435.15 program for site acquisition
435.16 program for library operations
435.17 program for plant safety
435.18 program for grounds safety
435.19 program for bus operations
435.20 program for bus maintenance
435.21 program for transportation safety
435.22 program for school lunch
435.23 program for research and experimentation in relation to school plant and services

436.00 Programing school-community relations functions
436.10 program for information services to community
436.11 program for information services to mass media

436.12	program for handling requests for information
436.13	program for conferring with individuals from community
436.14	program for conferring with groups from community
436.15	program for reporting pupil progress
436.17	program for use of school facilities by nonschool groups
436.18	program for research on school community relations

Definition of Terms

The final step in the development of the taxonomy was to define all major terms. The definitions offered by Etzioni for major components and attributes were accepted and used in almost every instance. Where characteristics were added to extend those offered in the basic theory, definitions were constructed. The following definitions of major components, attributes, and characteristics were developed during the course of the project.

I. Goals. A state of affairs that an organization is attempting to realize. A goal is an image of a future state which may or may not be brought about.

A. Order goal. The order goals of an organization are those oriented toward the control of actors who are (1) deviants in the eyes of the organization, (2) deviants in the eyes of some social unit the organization is serving (often society), or (3) nondeviants in the eyes of the organization.

Control of deviance. Control of deviant actors through various sanctioning processes.

Control of nondeviance. Control of nondeviant actors through processes other than sanctions. Examples of nonsanction processes are coordination, oral and written communication, classroom supervision, teachers' meetings, personal interviews, etc., with nondeviant actors.

B. Economic goal. The economic goals of an organization are those related to increasing or maintaining the output of services or commodities by utilizing production factors. The production factors of an organization are capital goods, consumable goods, and human resources.

Increasing services or commodities. To increase the output of services or commodities being produced an organization attempts (1) to increase financial support to augment either the present quality or quantity of capital goods, consumable goods, or human resources, or (2) to increase operating efficiency to augment either the present quality or quantity of capital goods, consumable goods, or human resources.

Maintaining services or commodities. To maintain the output of services or commodities being produced an organization attempts (1) to maintain or increase the financial support to continue using the present quality or quantity of capital goods, consumable goods, or human resources or (2) to maintain or increase operating efficiency to continue using the present quality or quantity of capital goods, consumable goods, or human resources.

C. Culture goal. The culture goals of an organization are those which are oriented toward the institutionalization of conditions needed for the creation and preservation of symbolic objects, their application, and the creation or reinforcement or commitments to such objects.

Intellectual--the maintenance, extension, and/or improvement of the capacity of learners to possess, to communicate, to create, and to desire knowledge.

Social--the maintenance, extension, and/or improvement of the capacity of learners to know about, and to practice increasingly acceptable man-to-man, man-to-state, man-to-country, and man-to-world relationships.

Personal--the maintenance, extension, and/or improvement of the capacity of learners to know, to understand, to practice, and/or to appreciate the importance of physical health, mental health, moral integrity, and cultural and leisure pursuits to personal development.

Productive--the extension and/or improvement of the ability of learners to prepare for and to manage vocational, family and financial problems and opportunities.

II. Power. The ability of an actor to induce or to influence other actors to carry out his directives or any other norms he supports.

A. Coercive power rests on the application, or the threat of application of physical sanctions such as infliction of pain; generation of frustration through restriction of movement; or controlling the satisfaction of needs through force.

Status-derived--power derived from position or rank of an individual or group.

Competence-derived--power which stems from respect for the knowledge and judgment exhibited by an individual or group.

Charisma-derived--power derived from extraordinary personal qualities which enable an actor to exercise diffuse and intense influence over the normative orientations of other actors.

B. *Utilitarian power* is based on control over material resources and rewards through allocation of salaries and wages, "fringe benefits," services and commodities.

Status-derived--power derived from position or rank of an individual or group.

Competence-derived--power which stems from respect for the knowledge and judgment exhibited by an individual or group.

Charisma-derived--power derived from extraordinary personal qualities which enable an actor to exercise diffuse and intense influence over the normative orientations of other actors.

C. *Normative power* is based on the manipulation of esteem, prestige, and ritualistic symbols; and on allocation and manipulation of acceptance and positive response.

Status-derived--power derived from position or rank of an individual or group.

Competence-derived--power which stems from respect for the knowledge and judgment exhibited by an individual or group.

Charisma-derived--power derived from extraordinary personal qualities which enable an actor to exercise diffuse and intense influence over the normative orientations of other actors.

III. *Involvement* refers to the cathectic-evaluative orientation of an actor to an object, characterized in terms of intensity and direction.

A. *Alienative involvement* designates an intense negative orientation.

Formal organization--intense, negative orientation of an actor to needs and values of the formal organization as defined or expressed by either the hierarchy or the actor's peers.

Primary groups--intense, negative orientation of an actor to the needs and values of the informal organization as defined or expressed by either the hierarchy or the actor's peers.

B. *Calculative involvement* designates either a negative or a positive orientation of low intensity.

Formal organization--an actor's low intensity orientation (negative or positive) to the needs and values of the formal organization as defined or expressed by either the hierarchy or the actor's peers.

Primary groups--an actor's low intensity orientation (negative or positive to the needs and values of the informal organization as defined or expressed by either the hierarchy or the actor's peers.

C. Moral involvement designates a positive orientation of high intensity. Pure moral involvement is based on internalization of norms and identification with authority; social involvement rests on sensitivity to pressures of primary groups and their members.

Formal organization--high intensity, positive orientation of an actor to the needs and values of the formal organization as defined or expressed by either the hierarchy or the actor's peers.

Primary groups--high intensity, positive orientation of an actor to the needs and values of the informal organization as defined or expressed by either the hierarchy or the actor's peers.

IV. Task. The routine, instrumental, and expressive activities engaged in by actors.

A. Expressive tasks--those tasks oriented toward defining, legitimizing and obtaining commitment to broad policies or ends that are to guide the organization's mission or missions.

Goal-derived policy setting--activities oriented toward the development of broad policies to implement order, economic, or cultural goals.

Normative integration--activities oriented toward the development of congruent consensus spheres in relation to goal-derived policies, general values, and cognitive perspectives (hierarchical and peer).

Social integration--activities oriented toward the development of positive expressive relationships concerning organizational cooperation, commitment, needs, and stability (hierarchical and peer) in relation to broad policies.

B. Instrumental tasks--those tasks oriented toward defining, legitimizing and obtaining commitment to means that are to be used or permitted in the pursuit of broad policies or ends.

Organizational means policy-setting--activities oriented toward the development of means to effect goal-derived broad policies.

Normative integration--activities oriented toward the development of congruent consensus spheres in relation to organizational means policies (hierarchical and peer).

Social integration--activities oriented toward the development of positive expressive relationships in relation to means policies (hierarchical and peer).

C. Routine tasks--those tasks oriented toward the implementation of means. Routine tasks are sufficiently defined in the framework.

CLASSIFICATION OF UNITS OF BEHAVIOR

first letter caps only
not underlined

The understanding and utilization of any taxonomic system requires complete familiarity with and a working knowledge of (1) the definition of terms, (2) the categories of the system, and (3) the procedures to be followed in applying the taxonomy. In reviewing the classifications of units of behavior presented in this section, it may be helpful to refer to the definition of terms and the categories (enlarged taxonomy) presented in the previous section of this chapter.

The step-by-step procedure for the classification of each OTU (organizational taxonomic unit) was: (1) to determine which, if any, of the four components (goal, power, involvement, task) were observable, (2) to determine which, if any, of the three attributes per component were observable, and (3, 4, 5) to determine which, if any, of the supra-characteristics, super-characteristics, and sub-characteristics respectively were observable. Chart 4 illustrates the step-by-step procedure in classifying the OTUs.

Chart 4

Step-by-Step Identification of Components, Attributes, and Characteristics

STEPS	GOALS	POWER	INVOLVEMENT	TASK
1. Note existence of components	X	X	X	X
2. Identify attributes	X	X	X	X
3. Identify supra-characteristics	X	X	X	X
4. Identify super-characteristics	X	X	X	X
5. Identify sub-characteristics[1]	X	X	X	X
Final Classification	XXXXX	XXXXX	XXXXX	XXXXX

[1] Sub-characteristics in the classification system were not derived for all super-characteristics.

Classification of OTU Number 1

1 Component: Goal
2 Attribute: Economic
2 Supra-Characteristic: Maintaining Service or Commodities
.2 Super-Characteristic: Operating Efficiency
3 Sub-Characteristic: Human Resources
122.23 is the final classification utilizing the taxonomic system. (See enlarged taxonomy).

2 Component: Power
3 Attribute: Normative
1 Supra-Characteristic: Status Derived
.1 Super-Characteristic: Intraorganizational
0 Sub-Characteristic: No sub-characteristics in taxonomy
231.10 is the final classification utilizing taxonomic system. (See enlarged taxonomy).

3 Component: Involvement
2 Attribute: Calculative
1 Supra-Characteristic: Formal Organization
.1 Super-Characteristic: Hierarchical
1 Sub-Characteristic: Needs
321.11 is the final classification utilizing the taxonomic system. (See enlarged taxonomy).

4 Component: Task
3 Attribute: Routine
2 Supra-Characteristic: Programing Staff Personnel Functions
.11 Super-Characteristic: Selection of Professional Staff Personnel
432.11 is the final classification utilizing the taxonomic system. (See enlarged taxonomy)

Classification of other OTUs

Ninety OTUs were classified on the basis of the enlarged taxonomy utilizing the step-by-step procedure outlined above.[5] The final numeric classification for each of the ninety OTUs is reported in TABLE 1. An examination of TABLE 1 reveals that all four components were observed in each of the ninety OTUs, an attribute was identified for each component, a supra-characteristic and a super-characteristic were identified in every instance, and a sub-characteristic was identified whenever such a category existed in the taxonomic system.

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[5] These ninety OTUs are published in Daniel E. Griffiths et.al., Organizational Taxonomic Units: Used in Developing Taxonomies of Organizational Behavior in Education (Washington, D.C.: OEO Contract #), 1966.

TABLE 1

DETAILED CLASSIFICATION OF ORGANIZATIONAL BEHAVIOR: PUBLIC AND HIGHER EDUCATION OTUs[1], [2]

OTU Number	Goal	Power	Involvement	Task
1	122.23	231.10	321.11	432.11
2	122.23	231.10	321.11	432.11
3	110.00	233.30	322.21	412.22
4	122.23	221.10	321.11	432.11
5	121.11	231.30	321.11	435.10
6	121.11	231.10	321.11	436.12
7	122.23	231.10	311.12	432.11
8	122.23	231.10	321.11	432.11
9	112.11	231.10	321.10	432.13
10	112.12	231.10	321.10	423.12
11	112.12	231.10	321.11	421.30
12	112.12	211.10	321.11	435.13
13	121.11	233.30	322.22	433.19
14	122.10	231.10	321.11	434.10
15	112.11	231.10	311.12	434.00
16	122.23	231.10	331.12	432.12
17	112.11	231.10	321.10	436.13
18	112.11	231.10	321.11	436.12
19	121.22	231.10	321.11	434.21
20	121.23	231.20	321.11	411.20
21	122.10	231.10	331.11	421.20
22	121.23	211.10	311.11	432.10
23	130.00	231.10	331.12	433.17
24	121.10	231.20	321.12	411.30
25	122.23	231.20	321.11	432.22
26	122.10	231.20	321.00	436.12
27	122.20	231.30	310.00	434.12
28	134.00	231.10	331.12	411.30
29	121.10	231.20	321.11	436.14
30	134.00	233.30	311.12	421.30
31	122.23	231.10	321.11	431.15
32	121.10	231.10	321.11	434.12
33	122.20	211.10	311.11	431.13
34	121.13	231.10	331.12	433.13
35	121.12	211.10	311.11	434.21
36	122.20	231.10	311.12	433.10
37	112.12	231.10	331.11	436.15
38	130.00	231.10	331.11	421.30
39	112.11	221.10	321.10	433.24
40	111.11	211.10	321.11	433.24
41	122.23	211.10	321.11	431.15
42	122.10	231.10	321.11	434.15
43	111.11	211.10	321.11	433.24
44	111.11	231.10	321.12	433.24
45	122.20	231.10	321.11	435.19
46	111.12	211.10	321.11	433.19

TABLE 1 (Continued)

DETAILED CLASSIFICATION OF ORGANIZATIONAL BEHAVIOR:
PUBLIC AND HIGHER EDUCATION OTUs[1, 2]

OTU Number	Goal	Power	Involvement	Task
47	112.12	231.10	321.00	432.00
48	112.12	231.10	321.11	434.11
49	112.13	231.10	321.12	412.11
50	111.12	211.10	321.11	432.16
51	112.12	211.10	321.11	432.15
52	130.00	211.10	311.11	421.30
53	111.13	211.20	321.12	412.11
54	122.21	211.10	321.11	433.24
55	121.10	231.10	321.11	421.30
56	111.11	211.10	311.11	433.11
57	122.21	231.10	321.11	434.11
58	111.11	221.10	321.11	434.14
59	121.13	221.10	321.11	432.11
60	131.10	231.10	321.11	411.30
61	122.13	221.10	321.11	422.11
62	111.11	211.10	311.12	421.10
63	122.00	231.10	321.11	422.14
64	122.23	231.10	321.11	432.10
65	122.12	231.10	321.11	434.21
66	112.11	231.10	321.11	431.00
67	112.11	231.10	321.11	432.17
68	112.11	231.10	321.11	436.12
69	112.12	231.10	321.11	433.12
70	112.11	231.10	321.11	433.11
71	112.11	231.10	321.11	433.16
72	112.11	231.10	321.11	433.12
73	122.13	231.10	321.11	432.11
74	122.23	231.10	321.11	432.11
75	112.11	231.10	321.12	433.12
76	122.13	221.10	321.11	434.12
77	131.00	321.10	321.12	412.11
78	130.00	231.10	331.12	431.10
79	130.00	231.10	321.12	411.30
80	111.11	211.10	321.11	433.24
81	122.21	231.10	331.12	434.26
82	112.12	231.10	321.12	433.24
83	131.00	231.10	331.11	431.12
84	112.12	231.10	331.12	436.13
85	111.11	211.10	311.11	432.19
86	112.11	231.10	331.11	432.13
87	133.00	231.10	321.11	421.30
88	121.21	231.20	331.11	434.20
89	112.11	231.10	321.11	434.12
90	111.10	231.10	321.11	436.11

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[1] OTUs numbered 1-53 and 78-90 are public education specimens; OTUs numbered 54-77 are higher education specimens.

[2] The master list used in codification is presented in this chapter in the section entitled "The Enlarged Taxonomy."

ANALYSIS OF THE TAXONOMY

Several basic questions may be raised in the analysis of a theoretically-derived taxonomy of organizational behavior. This section directs attention to four basic questions. What is the validity and reliability of the taxonomy? What is the potential of the taxonomy in discriminating among different classes and/or types of organizational behavior? How well did the taxonomy actually discriminate among different classes and/or types or organizational behavior? Can patterns of organizational behavior be observed through application of the taxonomy?

Validity and Reliability

The validity of the taxonomy based upon compliance theory was not subjected to statistical testing. Moreover, the content validity of the system cannot be well established until empirical tests of the taxonomy have been conducted.[6] The theoretical and observable discriminating abilities of the taxonomy, however, appear to lend strength to the content validity of the system.

The reliability of the system, like validity, cannot be well established until empirical use of the taxonomy has been conducted. Some hints regarding the reliability of the system were obtained by comparing the results of independent classifications of the 90 OTUs. In more than 80 per cent of the cases there was agreement on the final classification, i.e., agreement on the component, attribute, supra-characteristic, super-characteristic, and sub-characteristic. Progressive improvement in the degree of concurrence on final classifications was observed as the researchers continued to apply the taxonomic system to units of behavior.

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[6] Intensive empirical testing may reveal certain characteristics which do not appear in the present form of the taxonomy.

Classification and Discrimination Potential

A significant feature of the taxonomy is its utility in classifying and discriminating among "types" of organizational behavior. Chart 5 illustrates the classification and discrimination potential of the system when the components, attributes, and supra-characteristics are combined.[7]

Chart 5

Potential for Classification and Discrimination Among Types of Organizational Behavior

	Goal	Power	Involvement	Task	Discrimination Po-	Times[1]	Cumulative Discrimination Potential
No. of Components	1	1	1	1	1	--	1
No. of Attributes	3	3	3	3	81	$(1)^3$	81
No. of Supra-Characteristics	8	9	6	12	5,184	$(3)^3$	139,968

[1] A given attribute of a component may combine with all the other three components, e.g., a goal attribute could combine with the components power, involvement, or task. A given supra-characteristic of an attribute may combine with all of the three other components and with any one of the three attributes per component.

Observed Types of Organizational Behavior

In further assessing the taxonomy it is essential to evaluate its power to discriminate among distinct types of organizational behavior. The theoretical number of distinct types of organizational behavior observed is limited by (1) the number of behavior units observed and/or (2) the discrimination potential of the total system. In this study 90 units of organizational behavior were observed; thus, the theoretical number of distinct types of organizational behavior was 90. When the enlarged taxonomy was used to classify the 90 OTUs, 84 distinct types of organizational behavior were identified, (see TABLE 1). Identical classifications were obtained for the following OTUs: 1, 2, 8, and 74; 13 and 68; 17 and 82; 27 and 80.

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[7] It should be noted that even finer classification and discrimination potentials are available if the super-characteristics and sub-characteristics are considered.

In addition to noting the distinct or detailed types of behavior classified through use of the enlarged taxonomy, it is important to note how the system discriminated among classes of behavior at a more general level, i.e., how the system discriminated among the 81 classes of organizational behavior postulated in Chart 3.

TABLE 2 reports the classes and frequencies of organizational behavior classified in 90 units of observed behavior. This table indicates that 27 of the 81 general classes of organizational behavior were observed. The fact that 33 per cent of the postulated classes of organizational behavior were observed in a small sample of OTUs tends to indicate that a large majority (if not all) may exist.

The ability of the taxonomy to discriminate among types of organizational behavior at both a detailed and general level has been demonstrated. The classification of additional units of organizational behavior will provide further insight regarding the discriminating abilities of the taxonomic system.

Patterns of Organizational Behavior

To discern patterns of organizational behavior from a small number of observations, it was necessary to focus upon a general descriptive level. Thus, for the purposes of this analysis attention was focused upon the 81 classes of organizational behavior postulated in Chart 3.

Three basic questions were raised in an attempt to detect patterns of organizational behavior from the 90 OTUs: (1) What was the observed frequency and division between order, economic, and culture goals; coercive, utilitarian, and normative power; alienated, calculative, and moral involvement; and expressive, instrumental and routine tasks? (2) Was there a difference between the organizational behavior in public education and in higher education? (3) When one of the three attributes of a given component was observed, with which attribute in each of the other three components did it pair? For example, when an order goal was observed, how often did it pair with coercive, utilitarian, and normative power; alienated, calculative, and moral involvement; and expressive, instrumental and routine tasks? TABLE 3 reports these data for the specimens of behavior collected in higher education and public education settings.

Patterns of organizational behavior can also be viewed by noting the frequency of observed pair-wise relationships in a taxonomic system. The observed pair-wise relationships among the 12 attributes in the taxonomy are presented in TABLE 4. The following pair-wise relationships derived from TABLE 4 appear to be of significance:

Pair-Wise Relationships (Attributes)	Per Cent
1. Order goal and normative power	66
2. Order goal and calculative involvement	87
3. Order goal and routine tasks	84
4. Economic goals and normative power	78
5. Economic goals and calculative involvement	73
6 Economic goal and routine tasks	88
7. Culture goal and normative power	91
8. Coercive power and order goals	69
9. Utilitarian power and economic goals	71
10. Alienated involvement and economic goals	75
11. Utilitarian power and calculative involvement	100
12. Culture goals and moral involvement	64
13. Moral involvement and normative power	93
14. Expressive task and calculative involvement	90
15. Expressive task and normative power	90
16. Calculative involvement and normative power	76
17. Moral involvement and culture goal	47
18. Alienated involvement and routine task	90

TABLE 2

CLASSES AND FREQUENCIES OF IDENTIFIED ORGANIZATIONAL BEHAVIOR[1]

Goal	Power	Involve-ment	Task	Frequency	Goal	Power	Involve-ment	Task	Frequency	Goal	Power	Involve-ment	Task	Frequency
O	Co	A	R	2	Ec	Co	A	R	3	Cu	Co	A	R	0
O	Co	A	I	1	Ec	Co	A	I	0	Cu	Co	A	I	0
O	Co	A	Ex	0	Ec	Co	A	Ex	0	Cu	Co	A	Ex	0
O	Co	Ca	R	7	Ec	Co	Ca	R	1	Cu	Co	Ca	R	0
O	Co	Ca	I	0	Ec	Co	Ca	I	0	Cu	Co	Ca	I	0
O	Co	Ca	Ex	1	Ec	Co	Ca	Ex	0	Cu	Co	Ca	Ex	0
O	Co	M	R	0	Ec	Co	M	R	0	Cu	Co	M	R	0
O	Co	M	I	0	Ec	Co	M	I	0	Cu	Co	M	I	1
O	Co	M	Ex	0	Ec	Co	M	Ex	0	Cu	Co	M	Ex	0
O	U	A	R	0	Ec	U	A	R	0	Cu	U	A	R	0
O	U	A	I	0	Ec	U	A	I	0	Cu	U	A	I	0
O	U	A	Ex	0	Ec	U	A	Ex	0	Cu	U	A	Ex	0
O	U	Ca	R	2	Ec	U	Ca	R	4	Cu	U	Ca	R	0
O	U	Ca	I	0	Ec	U	Ca	I	1	Cu	U	Ca	I	0
O	U	Ca	Ex	0	Ec	U	Ca	Ex	0	Cu	U	Ca	Ex	0
O	U	M	R	0	Ec	U	M	R	0	Cu	U	M	R	0
O	U	M	I	0	Ec	U	M	I	0	Cu	U	M	I	0
O	U	M	Ex	0	Ec	U	M	Ex	0	Cu	U	M	Ex	0
O	N	A	R	1	Ec	N	A	R	3	Cu	N	A	R	0
O	N	A	I	0	Ec	N	A	I	0	Cu	N	A	I	0
O	N	A	Ex	0	Ec	N	A	Ex	0	Cu	N	A	Ex	0
O	N	Ca	R	17	Ec	N	Ca	R	20	Cu	N	Ca	R	0
O	N	Ca	I	2	Ec	N	Ca	I	2	Cu	N	Ca	I	2
O	N	Ca	Ex	2	Ec	N	Ca	Ex	2	Cu	N	Ca	Ex	3
O	N	M	R	3	Ec	N	M	R	4	Cu	N	M	R	3
O	N	M	I	0	Ec	N	M	I	1	Cu	N	M	I	1
O	N	M	Ex	0	Ec	N	M	Ex	0	Cu	N	M	Ex	1

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[1] Total N = 90

TABLE 3

FREQUENCY AND PER CENT OF ATTRIBUTES CLASSIFIED IN NINETY UNITS OF ORGANIZATIONAL BEHAVIOR[1]

COMPONENTS		Order		Economic		Cultural	
		f	%	f	%	f	%
GOALS	Public School	27	41	30	45	9	14
	Higher Education	11	46	11	46	2	8
	TOTAL	38	42	41	45	11	12
		Coercive		Utilitarian		Normative	
		f	%	f	%	f	%
POWER	Public School	14	21	2	3	50	76
	Higher Education	2	8	5	21	17	71
	TOTAL	16	18	7	8	67	75
		Alienated		Calculative		Moral	
		f	%	f	%	f	%
INVOLVEMENT	Public School	8	12	44	67	14	21
	Higher Education	2	8	22	92	0	0
	TOTAL	10	11	66	73	14	16
		Expressive		Instrumental		Routine	
		f	%	f	%	f	%
TASKS	Public School	7	11	7	11	52	78
	Higher Education	2	8	4	17	18	75
	TOTAL	9	10	11	12	70	78

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[1] Of the 90 units of organizational behavior analyzed and classified, 66 units were in public schools and 24 units in higher education.

TABLE 4

OBSERVED PAIR-WISE RELATIONSHIPS OF THE TWELVE ATTRIBUTES IN THE CLASSIFICATION SYSTEM[1]

	Power			Involvement			Task		
	Coercive	Utilitarian	Normative	Alienated	Calculative	Moral	Instrumental	Expressive	Routine
oal									
Order	11	2	25	2	22	2	2	2	32
Economic	4	5	32	6	30	5	5	0	36
Culture	1	0	10	0	4	7	4	4	3
ower									
Coercive				6	4	1	2	1	13
Utilitarian				0	7	0	1	0	6
Normative				4	50	13	8	8	51
Involvement									
Alienated							1	0	9
Calculative							7	8	51
Moral							3	1	10

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[1] Observed relationships based upon the classification of 90 units of organizational behavior.

SUMMARY AND IMPLICATIONS ⇐ First letter caps only

As indicated in this chapter, Etzioni's theoretical constructs proved useful and relevant for developing a viable taxonomy of organizational behavior. It was possible to generate 81 independent classes of organizational behavior on the basis of components and attributes derived from Etzioni's work. Application of the taxonomy to the 90 behavioral units collected in public and higher education settings resulted in the identification of 27 of the 81 classes of organizational behavior postulated. Two classes of organizational behavior were dominant in the 90 OTUs: the ONCaR and ENCaR patterns occurred most frequently.

In looking to the future, it should be emphasized that results reported in this chapter are tentative in nature. They form only a beginning for studying patterns of organizational behavior. Some important questions, however, may be raised on the basis of the work to date.

The Taxonomy. A number of general and specific questions may be asked in relation to the taxonomy. Is the taxonomy all-encompassing, i.e., can all types of organizational behavior be encompassed and classified in terms of the framework? Do all 81 classes of organizational behavior exist? How necessary is it to go beyond the 81 classes of organizational behavior (i.e. to use the enlarged taxonomy) to describe organizational behavior accurately? Finally, what is the validity of the taxonomy, and what reliability can be obtained in classifying organizational behavior on the basis of the 81 classes of organizational behavior postulated?

Patterns of Organizational Behavior. A number of interesting questions may also be posed in relation to patterns in the behavior of organizations of various types. Are there, for example, definite and enduring patterns of organizational behavior which appear to characterize public schools? Are there regularities in behavior at various organizational levels? How do patterns and regularities identified in educational organizations compare with those that may exist in business, government, and hospital organizations?

Moreover, are there different behavior patterns in different schools or different school systems? Does the nature of goals determine the patterns of tasks, power, and involvement used in organizations? What is the linkage between patterns of organizational behavior and the nature of extra-organizational demands? It would appear that attention to questions similar to these would open whole new vistas in research on organizational behavior.

CHAPTER V

TOWARD A TAXONOMY OF BUREAUCRATIC BEHAVIOR IN EDUCATION ORGANIZATIONS

by MOZELL HILL*

The primary purpose of this chapter is to set forth a taxonomic scheme for classifying bureaucratic behavior in complex modern organizations. As an introduction to the chapter, the _theory of bureaucracy_ will be described and explained. Since the focus of the taxonomic scheme will be upon administrative behavior in organizations, it will be appropriate to present a conceptual and methodological strategy that will be useful in observing and classifying this kind of behavior in organizations. In addition, this chapter will include the following; (1) the classificatory categories generated from the theory; (2) the presentation of a tri-dimensional theoretical taxonomic model, along with definitions and explanations of the categories for classifying administraitve behavior in organizations; (3) an analysis of operational taxonomic units, ("OTU's "-- specimens of administrative behavior selected from field study), along with techniques for classifying and scoring; (4) the listing and analysis of classes of bureaucratic behavior in organizations emerging from the theoretical model; (5) analyses of selected operational taxonomic units taken from case study materials of the field research; (6) finally, a summary of the research with suggestions for the utility of the scheme, along with some generalizations and research hypotheses.

Theory of Bureaucracy

The concept, "bureaucracy" appeared in the literature with the writings of the German sociologist, Max Weber.[1] His concern for explaining the changing character of behavior in modern organizations was the first systematic effort toward a theory that would account for bureaucratic behavior in organizations. Weber saw organizational forms evolving from a relatively simple, primitive, sacred, nonspecialized kind of society at one extreme, moving toward a complex, secular, associational, contractual, and highly specialized kind of society at the other extreme. In this context bureaucratic behavior in one form or another was inherent in every type of organization where there were complex administrative problems to be resolved. Accordingly, bureaucracy was not to be confined to political and business institutions as is commonly assumed; it was to be found in all human institutions -- economic, religious, political, cultural, recreational -- and for our special purpose, in all educational endeavors, public and private schools, colleges and universities.

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*The author gratefully acknowledges the assistance of Professor Seymour Evans in the preparation of the work presented in this chapter.

In order to comprehend Weber's employment of the concept "bureaucracy," it must be stressed that as used in his theoretical scheme it is an ideal type construct. In other words the concept is a heuristic device -- a methodological tool -- derived by abstracting the most characteristic aspects of all known modern organizations. Bureaucracy, used in this scientific sense becomes all of the observable behaviors that are "ideally typical" of modern organizations.[2] Thus, as a methodological concept, the term must not be thought of in the popular sense of the term, e.g., red tape, inefficiency, high-handed authority, corruption, etc. Max Weber attached no such invidious connotations to his concept.

Indeed, he felt that bureaucracy was essential for the operation of any and every modern organization. He believed that bureaucratic organization was technically superior to other forms of organization. The purpose of bureaucracy as he stated it was . . . "to promote precision, speed, unambiguity, knowledge of files, continuity, discretion, strict subordination, reduction of friction, and of materials and cost . . . ."[3]

The crucial contribution of Weber's theory of bureaucracy was that it provided a framework for a systematic understanding of formal organizations. The theory explains the interdependence among key structural characteristics in the context of complex bureaucratic organizations. This is to say, the theory accounts for the relationships between organizational attributes which permit the classification and analysis of social forms that produce these relationships. Thus, at the very heart of the Weberian theory are the structural characteristics of bureaucracy and their relationships to each other.

Robert Presthus listed five (5) characteristics of bureaucrary as indicated by Weber:

1. Fixed and official jurisdictional areas, which are regularly ordered by rules, that is, by laws or administrative regulations.
2. Principles of hierarchy and levels of graded authority that ensure a firmly ordered system of super- and sub-ordination in which higher offices supervise lower ones.

3. Administration based upon written documents; the body of officials engaged in handling these documents and files, along with other material apparatus make up a "bureau" or "office."
4. Administration by full-time officers who are thoroughly and expertly trained.
5. Administration by general rules which are quite stable and comprehensive.[4]

Weber's "ideally typical" aspects of bureaucratic behavior deals exclusively with the formal (structural) aspects of modern organizations. He devoted very little attention to the unanticipated consequences in terms of their functional and dysfunctional aspects. Peter Blau[5] has extended Weber's theory to take into account these omissions. He has summarized the characteristics of all complex bureaucratic organizations as containing the following:

1. The regular activities for the purposes of the organization are disturbed in a fixed way as official duties -- a clear-cut division of labor calling for only specialized experts in each particular position.
2. The organization of offices follows the principle of hierarchy; that is, each lower office is under the control and supervision of a higher one. Officials in administrative hierarchy are accountable to superiors for decisions and actions -- have authority over all

subordinates and use status perogatives to extend power of control.

3. Operations are governed by a consistent system of abstract rules . . . and consist of the application of these rules to particular cases. This assumes uniformity in performance of every task, regardless of the number of persons engaged. Thus, explicit rules and regulations define the responsibility of each member of the organization and the relationship between them.

4. The ideal official conducts his office . . . in a spirit of formalistic impersonality -- without hatred or passion, and hence without affection or enthusiasm. Rational standards without interference from personal considerations must prevail; disinterestedness and lack of personal interest go together; officials must maintain social distance and impersonal detachment, i.e., equitable treatment of all persons.

5. Employment in the bureaucratic organization is based on technical qualifications and is protected against arbitrary dismissal. It constitutes a career. There is a system of promotions according to seniority and to achievement, or both . . . .

> 6. Experience tends universally to show that the purely bureaucratic type of administrative organization . . . is from a purely technical point of view capable of attaining the highest degree of efficiency. The fully developed bureaucratic mechanism compares iith other organizations exactly as does the machine with non-mechanical modes of production. Bureaucracy solves organizational problems by maximizing organizational efficiency.[6]

Bureaucracy, accordingly, is a formal and rational organization in which ideally all of the activities in which members engage are functionally related and coordinated toward the purposes or goals of the organization. In a similar vein, Robert K. Merton points to the importance and utility of the concept when he observed that:

> The function of security of tenure, pensions, incremental salaries and regularized procedures for promotion is to ensure the devoted performance of official duties, without regard for extraneous pressures.
>
> The chief merit of bureaucracy is its technical efficiency, with premium placed on speed, expert control, continuity, discretion and optimal returns on output. The structure is one which approaches the

complete elimination of personalized relationships and non-rational considerations (hostility, anxiety, affectual involvements, etc.)[7]

Authority - The most salient and most independent variable in bureaucratic organizations is authority. Any bureaucracy must be observed as the "flow of authority" within the formal organizational structure. Authority is the capacity to evoke compliance from another, or the ability to impose one's will on another regardless of opposition.

Max Weber identified three sources of authority in organizations: charismatic, traditional and rational. Charismatic authority, he defined as authority based on the magical and mystical powers, wisdom and personal characteristics of an individual. The charismatic administrator demands obedience to his authority because of his status as a person of trust whose ways of action have been "ordained" by him. Traditional authority is based on the belief in the sanctity of the customary procedures from which stems one's authority to exercise control and power. Here the administrator expects and even demands obedience as well as loyalty because he occupies a traditionally sanctioned position in the organization. On the other hand rational authority stems from the superior knowledge and technical competence of the administrator for allocating roles and facilities of the organization that are required for the achievement of organizational goals. Weber conceived both charismatic and traditional authority as inappropriate, especially as organizations changed their forms from nonspecialized to highly technical kinds of activities. Both charisma and tradition, he conceived as antithetical to the processes of rationalization. As a result, a rational and legalistic authority structure has emerged in modern organizations.[8]

Structural Characteristics of a Bureaucracy

Employing the Weberian methodological conceptual scheme as a foundation, Robert Presthus[9] constructed a model for an analysis of the structural characteristics of complex modern organizations. He included the following characteristics in his list: hierarchy, specialization, oligarchy, co-optation, and status anxiety.

Hierarchy - Bureaucracy in formal organizations demands a system of ranking; that is, the staff of specialists is ranked along a descending scale from the top to bottom of the organization. There is a chain of command extending throughout the entire hierarchial system. In this respect, hierarchy refers to "line" relationship which gives those at the top of the organizational structure the right (authority) to manipulate (through decision-making) the issues and problems that have to be resolved. Thus, the main function of hierarchy, as Presthus stressed " . . . is to assign and to validate authority along a descending scale throughout the organization."[10] Hierarchy, accordingly is the foundation upon which all behaviors rest in bureaucratic organizations.

Specialization - Organizations necessitate increasing divisions of labor as they grow and expand. Thus, specialization is another key structural characteristic of modern formal organizations.

Specialization means that the organization attracts, and then arranges individuals into differential expectational roles or offices based on the trained and technical abilities and competencies that are required for carrying out differentiated tasks. A specialist must have a "trained capacity" to perform the tasks of his office.

Oligarchy - In traditional terms oligarchy means "rules by the few" and also "rule by the wealthy"; however, in modern organization, it refers to those salaried employees at the top of the hierarchial pyramid who have the power to control. It is characteristic of bureaucratic organizations to assume an oligarchial structure by distributing power unequally within the organization This generally means that decisions are made by "the men at the top." However, one should not imply that other members of the organization do not participate in the decision-making process and, that therefore they are powerless. Men at all administrative levels must have power to initiate, to communicate, to sanction and to direct and to shape the "climate of opinion" and behavior within the organization.

Co-optation - To fill vacancies, select, promote and transfer personnel is still another structural characteristic of bureaucracy; this is co-optation. It is through co-optation that the discipline and the continuity of the organization are maintained. This involves a continuous process by which those in control select and promote and designate their successors. The function of co-optation is to preserve internal unity; it makes loyalty the main basis for bureaucratic succession. Also, it is through co-optation that expectational behavior can be passed on through those selected after an initial period of induction.

Status - Organizations generate and maintain a status system. Status here refers to the different amounts of prestige, privileges, deference and rights accorded to the various positions in the hierarchy. Prestige and privilege which are accorded to the "men at the top" tends to decrease at a disproportionate rate as one descends the bureaucratic structure. Thus the members of the organization can be clearly differentiated from others according to their status. Moreover, status can be used as an accurate indicator of the positional relationships in the bureaucratic organization. Members of an organization tend to view the status system with varying degrees of anxiety, as they consciously move upward at differing rates in the organizational structure.

(INSERT HEADING)

The theory of administrative behavior as outlined by Arthur P. Coladarci and Jacob W. Getzels[11] was found to be strategically useful in this attempt to observe and classify bureaucratic behavior in educational organizations. They viewed administrative behavior within a framework of interpersonal relationships. Structurally speaking, interpersonal relationships occur within an organizational framework of superordination - subordination. Functionally, administrative behavior takes place in a hierarchy of relationships -- "the locus for allocating and integrating roles and facilities in order to achieve organizational goals."[12]

Strategically, the authors suggested that interpersonal relationships can be viewed through dyads -- the interaction between two actors: one unit being the initiator of the administrative action, and the other the recipient. The former (the initiator) can be observed as the independent and determining agent, the latter (the recipient) the dependent and determined.

Administrative behavior, that is, the interpersonal relationships between the superordinate and subordinate, involves the "handling of authority." The superordinate member of the administrative dyad exerts or has the right to use authority as he implements the goals of the organization. The superordinate must have the right to a power base, i.e., a legitimate source of authority. According to Coladarci and Getzels, " . . . the functioning of the administrative process depended on the nature of the interaction in the two situations (the interactions) as they determined the superordinate - subordinate relationships."[13]

Administrative behavior, i.e., the interactions between a plurality of actors (members) of the organization must be viewed and categorized explicitly from three dimensional vantage points. These dimensions can be classified in order of importance in terms of the magnitude of bureaucratic behavior: (1) The Goal Directional Dimension; (2) The Parameters of the Role Behavior; and (3) The Nature of the Affectivity between the Actors.

Goal-Directed Behavior -- Bureaucratically speaking, the goal direction of the interactions (Administrative dyads) between an initiator and recipient in a formal organization can be observed as either rational or non-rational.[14] Behavior is rational in an organization when the effort is to direct and control the main parts and activities so that each contributes to its maintenance of equilibrium, as each activity moves toward the accomplishment of organizational objectives. Moreover, rational~~ly~~ity is objective action based on technical competence and empirical reality. It is maintenance of a behavioral nexus between means and ends. In order for the flow of authority (inherent in administrative behavior) to be rational, its sources must be based on explicitly defined (written) norms --- rules and regulations. And as the authority flows from superordinate to subordinate it must contain an impersonal character of what rather than who.[15]

On the other hand, when behavior is not referent, or contrary in its consequences, to the stated organization objectives, then it is non-rational. Moreover, the source of the authority is either charismatic or traditional, and ofttimes a combination of both. In these instances, actions are neither based on technical competency of the parties, nor are they necessarily relevant to organizational goals.

Role-Directed Behavior -- The parameters of the role behavior of actors in an administrative dyad are either functionally diffuse or functionally specific.[16] "When the members of a dyad are intimately bound in such a way that the obligations of one to the other are taken for granted and are in a sense limitless."[17] the behavior is then functionally diffuse. Here the administrator's authority usually extends into the personal sphere since its parameters tend to range far beyond the organization's goals and objectives. It is virtually inevitable that when an administrative dyad is functionally diffuse, the administrator often finds himself in role conflict situations. The appearance of role conflict is a certain indication that the scope of the roles and facilities have been managed inadequately, and dysfunctional patterns of behavior appear in the organization. On the other hand, when, ". . . the obligations are restricted to those elements in the relationship that are defined by the technical competence and institutional status of the participants, the behavior is then functionally specific."[18] Therefore, in order for an administrative relationship to keep within the bureaucratic structure of the organization, the actors must assume appropriate roles compatible to the relationship as defined in the rules and regulation of the organization.

Affectivity Behavior -- This dimension refers to the personal character -- presence and state of feelings, emotions and their influence on behavior -- of interactions between actors. Affectivity was conceptualized by Coladarci and Getzels[19] as being either universalistic or particularistic. An interaction is universalistic when emotional considerations are secondary to all others. The rights and obligations of the participants are defined by legal and official rather than emotional considerations (i.e., impersonal competency is a greater factor than personal friendship). In this instance, the what, has dominance over the who. An act that is rational in terms of organizational goals in order to maintain its character of rationality must be implemented through a functionally specific role and in a universalistic manner. However, affectivity must not be confused with positive "human relations" as they occur in intergroup and interpersonal relations within any formal organization.

Behavior is particularistic when it is determined by what the participants mean to each other personally rather than the organizational positions they occupy. The overall administration of the organization is influenced by personal freindships, favoritism, nepotism, and informal lines of communication and modes of operation. Particularism is present, for example, when teachers are selected because they attended a particular school or worked for certain people to which and to whom an administrator has personal ties. Particularistic behavior is also present in the succession process or the allocation of personnel when the administrator says, "John is a good man. I'll have to make a slot for him in our summer program." Here, the purpose of his behavior is guided by whom rather than what is involved. To reiterate, both universalistic and particularistic relationships may be conducted in accordance with the principles of "good human relations." Likewise, these relationships may just as easily be characterized as negative and mutually unsatisfactory to the participants involved.

A Taxonomic Model For Classifying Bureaucratic Behavior

Figure 1 is a taxonomic tri-dimensional model that has been constructed from a retrieval of theories and conceptual strategies, some of which have been discussed above. These theories and strategies were selected chiefly from the writings of Max Weber, Robert Presthus, Peter Blau, Robert Merton, Talcott Parsons, Arthur Coladarci and Jacob Getzel, among several others. The functional purpose of the model is to classify administrative behavior within the context of bureaucratic organizations. As was indicated earlier, the foundation upon which the model rests is the concept, authority. Accordingly, the "flow of authority," is the discriminating variable that determines the structure and function of bureaucratic behavior in any formal organization.

INSERT FIGURE 1 HERE

Authority, that is, the way it is handled administratively in an organization, can be observed from three dimensional directions as shown at the front end of the model, ~~as~~ diagramatically mapped in Figure 1: its goal directions, its role parameters, its affectivity of interpersonal relations. In regard to goal~~s~~ -- purposes or objectives of the organizations -- "the flow of authority" is either rational or non-rational; the role dimensions of the behavior of members are either functionally specific or functionally diffuse; finally, the affectivity of interpersonal relations is either universalistic or particularistic.

tr

Structurally, administrative behavior in formal organizations contains five key characteristics listed at the top of the Figure: hierarchy, specialization, oligarchy, co-optation, and status. On the front side of the Figure each of the characteristics is then sub-divided according to its functional aspects and arranged into sub-categories of behavior as follows:[20]

1. Hierarchy
   Rank
   Line-Staff

2. Specialization
   Office
   Expectations

3. Oligarchy
   Power
   Sanction

4. Co-optation
   Selection
   Succession

5. Status
   Prestige
   Privilege

Classifying Administrative Behavior in Formal Organizations

It should be stressed again that the purpose of this theoretical taxonomic model is for classifying administrative behavior in formal organizations. Accordingly, the model diagramatically arranges and focuses observations upon distinct categories of events as they occur in the behavior of members of an organization.

The strategy outlined by Coladarci and Getzels[21] provides the vantage point from which to observe and classify behavior within the framework of the model as shown in Figure 1. In this connection, behavior is conceived as taking place in the interactions between individuals and groups in a social structure; the behavior becomes one of interpersonal relationships between members of the organization. For taxonomic purposes the strategy is to note, record and then classify each observable interpersonal relationship as a distinct specimen or "unit or behavior."

Each observation can be operationally viewed as an administrative dyadic transaction. By administrative dyadic transaction is meant an interpersonal relationship of two or indeed a plurality of actors in an organization who are engaged in interaction. One part of the

Insert on p 17

APPENDIX

Operational Definitions for Classifying Bureaucratic Behavior

1. Hierarchy - The grading of authority into a fixed ordered system of superordinate - subordinate relationships.
    - x. Rank - Differential degrees of authority according to position in the hierarchy.
    - y. Line-staff - The vertical descending scale of superordinate - subordinate relationships between positions in the organization.
2. Specialization - The differentiation and assignment of tasks in the organization on the basis of ability, technical competency, and other objective qualifications.
    - x. Office - Clearly defined positions to be occupied by specialists.
    - y. Expectations - Clearly defined behaviors that accompany the position occupied.
3. Oligarchy - Occupants of superordinate positions which carry the right to govern the behavior of the members of the organization.
    - x. Power - The right to evoke compliance.
    - y. Sanction - The means by which compliance is evoked.
4. Co-optation - A process by which the continuity of the organization is assured.
    - x. Selection - The recruitment of new individuals into the organization.
    - y. Succession - The reassigning of individuals within the organization.
5. Status - Differntials in symbolic behavior between individuals in the organization.
    - x. Prestige - The allocation to the occupants of positions of defined amounts of deference - behavior on the part of others in the organization.
    - y. Privilege - The defined amount of rights and immunities enjoyed by occupants of positions in the organization.

A+ Rational - a goal directed dimension of an interaction in which the behavior of the actors, implicit and/or explicit, is referent to purposive organizational objectives.

A- Non-rational - a goal directed dimension of an interaction in which the behavior of the actors, implicit and/or explicit, falls outside of the purposive organizational objectives.

B+ Functionally specific - a role dimension of an interaction in which the behavior of the actors, implicit and/or explicit, falls within the prescribed expectations of their office or position.

B- Functionally diffuse - a role dimension of an interaction in which the behavior of the actors, implicit and/or explicit, falls outside the prescribed expectations of their office or position.

C+ Universalistic - an affectivity dimension of an interaction in which the behavior of the actors, implicit and/or explicit, is objective (i.e., defined by organizational rules) and is conducted on an impersonal basis.

C- Particularistic - an affectivity dimension of an interaction in which the behavior of the actors, implicit and/or explicit, is subjective (i.e., defined by personal and emotional ties) and is conducted on a personal basis.

more definitive line

dyadic transaction taking place is initiating, i.e., sending or directing action; the other part is receiving that action and is modifying his (their) behavior accordingly. This indicates that the sender of action in the transaction is independent, and accordingly determining the action, and that the recipient(s) is dependent or being determined by that action. While the interactions ~~of~~ in such administrative dyadic transactions dyads are usually of a superordinate-subordinate, at times they can be of a ~~vertical~~ horizontal coordinate character in the sense that interactions do occur between specialists of the positions on the same levels of the hierarchial authority structure.

Development of Operational Taxonomic Units

The field study along with the Development of Operational Taxonomic Units (specimens of organizational behavior), henceforth to be referred to as OTUs is explained in Chapter III of this report. Procedurally, the classification of behavior (administrative dyadic transactions of interpersonal relationships, actors in an organization) appearing in these specimens involved five steps:

1. Each "OTU" was examined to determine which of the structural characteristics were present in each event occuring in the specimen.
2. The goal dimension of the behavior (interaction) in these combinations of characteristics were examined and determined to be either rational or non-rational.

3. Next, the role dimension was determined as either functionally specific or functionally diffuse.
4. Then the affectivity of the "dyad" was observed as either universalistic or particularistic.
5. Finally, each "dyad" was classified on a worksheet grid specially prepared for recording administrative behavior in bureaucratic organizations within the framework of the theoretical model.

The process of classifying behavior involved the use of a code developed by Professor Frank Lutz, Director of the Field Study for the Project. (See Chapter). Each "dyad" was recorded as an event in the complex series of interactions appearing in a total Operational Taxonomic Unit.

Recording and Classifying Field Study Data

Four taxonomists who participated in this research project selected five OTUs from a total of ninety (90) mounted from the field study, to be used in this book. Employing different theoretical strategies each taxonomist was interested in explaining and analyzing data and then demonstrating as well as testing the applicability of his models for classifying behavior in organizations. OTUs #1, #4, #41, #64, and #75 were those selected. (See Chapter).

Eighty-three dyadic transactions appeared in these five OTUs. The first three OTUs #1, #4, and #41 were mounted from the field study data on the Central Public School District, and #64 and #75 from the Urban University case materials. In only ten of the "dyads" were the goal directions rational in Central Public School District organizations. The remaining 27 were non-rational; only two of these were functionally specific in role dimensions, and the remaining 25 in addition to being non-rational were functionally diffuse and particularistic. On the other hand, each of the "dyads" in OTUs #64 and #75 were classified as rational, functionally specific, and universalistic.

By focusing on administrative dyadic transactions, i.e., interaction between members of the organization, one is able to identify observable behavior expressed in interpersonal relationships in respect to organizational activity. Moreover, by selecting the "dyads" for observation and classification, one can focus on the series of "events" that occur in a "specimen of behavior" in an organization. That is to say, this classificatory scheme forces and guides one to view these "events" within the context of administrative behavior in organizations.

Chart 1 shows the classification of administrative bureaucratic behavior in terms of dyadic transactions for OTU #41. The chart includes the dimensions of the interactions of these "dyads" or "events" occuring in this specimen of behavior, along with the structural characteristics and the appropriate subcategories for each of the five characteristics designated by 1,2,3,4,5. The appropriate sub-categories as indicated previously are designated by "X" and "Y" for each characteristic. The complete classification along with the scoring (to be explained later) appears at the top right hand side of the Chart. Thus, the Chart is the compilation of "events" for classifying ~~A~~ a "piece" of bureaucratic administrative behavior in a school organization within the tridimensional theoretical scheme of the model.

INSERT CHART I HERE

As the OTU begins, Dr. Sampson, the High School Principal, asked Mr. Niehouse, the Junior High School Principal for an opinion regarding who should teach health during the coming school year. As the first identifiable emitted behavior, it was labelled one (1). The Placement of one (1), representing this behavior, in Chart 1 was guided by the logic of the theoretically devised classification scheme. More specifically, behavior one (1), in terms of its goal direction was rational, since it was an attempt to direct and coordinate the activities of the organization towards the achievement of its goals. Also, the following structural characteristics were present in the behavior.

Hierarchy: line-staff -- The dyadic transaction took place between two individuals who were incumbents of positions in the hierarchy. Rank was not present since within the organizational structure of Central District both men held positions of equal rank in the school organization, two secondary school principals. Thus, the absence of a superordinate-subordinate relationship, but nevertheless it is an horizontal administrative dyadic transaction in as much as Sampson, the initiator of action that is being received by Niehouse, is sharing behavior with another administrative officer of equal authority.

2x and 2y Specialization: office and expectations -- The activity engaged in was rational, i.e., within the differentiated technical sphere (i.e., division of labor) of Dr. Sampson's organizational position. Moreover, his behavior in attempting the implementation of the job was in accord with his specialized position.

3x Oligarchy: power -- Inherent within the transaction was the power accrued to the occupants of the superordinate positions, the right to control the behavior of the subordinate members of the organization, (i.e., the power to decide who will teach what).

4y Co-optation: succession -- Number one (1) was entered in this column of Chart 1 since the dyad was clearly an aspect of the function of reassigning individuals within the organization.

Moreover, "dyad" one (1) was classified with regard to its role dimension as functionally specific since Sampson's actions took place within a role that was appropriate (within the parameter) to the relationship of specific role structures of the organization. This same transaction in its affectivity dimension was classified as being particularistic, although this was not explicit in the OTU. It was quite apparent, as pointed out in the brief "case background" to the OTUs that strong personal ties existed between these administrators. Indices present in the OTU which would result in such a classification were that the task was conducted orally in a face-to-face almost spontaneous situation; without any written guidelines; the eventual decision arrived at was a verbal agreement and subsequently not committed as an official record.

The dyadic transaction two (2) emitted by Niehouse in response to "dyad" one (1) was classified employing the same procedure. Occurring within the same organizational context, it was classified in the following columns: 1y - hierarchy: line-staff; 2x,2y - specialization: office and expectations; 3x,3y - oligarchy: power and sanction; and 4y - co-optation: succession. The transaction, however, is non-rational since Niehouse's decision was subjectively rather than objectively based. It was based on traditional customary or personal preference rather than rules and regulations of the school district. It was apparent in his response that since Niehouse taught health when he was a physical education teacher, it should be that way in this instance. In order for the behavior to have been rational, it would have had to have been based on technical competency –– an appraisal of the availability of staff in terms of student coverage, i.e., the comparative student-teacher ratios between physical education teachers and nurses; the building assignments of the two groups; and the specific trainings and competences of the two groups. In terms of its role dimension, the behavior was functionally specific since it fell well within the parameters of his organizational position. As with the rest of the behaviors in this interaction, they too, were particularistic since they were based on personal ties.

The remaining behaviors were classified similarly. Dyadic transaction three (3), Sampson's response to Niehouse, and four (4), Sampson's asking for Circle's opinion fell into the same classification as "dyad" one (1) with the following additions and subtractions for number four (4).

Structural characteristic 1x, hierarchy (rank) was present since Sampson and Niehouse were in a subordinate position to Circle. Also, 3x, (power) was absent from the behavior. Finally, an entry was made under 5x (status). This was the use of prestige to signify deference behavior towards Circle (prestige) which was non-rational in terms of the organizational objectives (i.e., rather than make the decision they deferred to judgment of a "non-expert").

Circle's response, dyadic transaction five (5), was non-rational since it was subjective and personal. It is not based on any explicitly defined norms -- rules, and regulations. Further, it was non-rational in terms of specialization since the area under discussion was outside of the realm of his (Circle) organizational position and technical competency. For these same reasons, it represented the non-rational use of power and sanctions in the performance of a succession action.

Also, the behavior is functionally diffuse since it fell outside of the prescribed expectations of his office (characteristic of charisma). That is, where the organizational role is highly internalized, the administrator recognizes few parameters to the limits of his authority and presumed expertise. His authority extended into every aspect of the organization's functions and beyond to the extra organizational facets of its member's lives. With regard to affectivity, the behavior was particularistic for the same above stated reasons.

By way of contrast and for the purpose of further testing the application of the theoretical model, the classification of dyadic transactions in Chart 2 contains 31 "events" that took place at a meeting between the Summer School Director, Dr. Cook, and Dr. Lewin, the Chairman of the Social Studies Department in Urban University. In it, Dr. Lewin sought and received direction and approval to recruit an outstanding visiting professor for the summer session. Implicit in the agreement was that this procedure would also serve as a means of attracting and reviewing persons to be considered for regular appointments to the staff.

INSERT CHART 2 HERE

The dyadic transactions engaged in were bureaucratic; that is, the behavior of both members of the "dyads" were rational and in accord with the objectives at hand. In terms of goal direction there were no observable deviations in behavior from the attainment of organizational goals. The questions and answers of both men were directed toward the making of decisions on the basis of full and accurate information as they had uncovered. Dr. Cook explicitly defined for Lewin the rules under which he was to operate in negotiating salary with the prospective staff member. Repeatedly, during the interactions, Dr. Cook rationally engaged in privileged behavior in interrupting Lewin to either seek or give additional information. At other times he employed a positive sanction by telling Lewin that his ideas were excellent. Later, he utilized power to caution not to "enter into any firm agreement." Throughout, Lewin responded with deference (i.e., "That's right," "Very good.").

At no time during the exchange was either individual observed as moving out of his organizational role. The behaviors of both were functionally specific and the affectivity was universalistic. Perhaps the observed behavior that demonstrates this most categorically took place at the end of the meeting when Dr. Cook made reference to himself or whomever else would be in his position come September. This expresses an objective view of his office or the position in the organization rather than the subjective view of the internalized position. Here the administrator sees the life of the organization continuing with or without him. Contrast this "official-legal" posture with that of the "charismatic-traditional" administrator whose perception of himself is inseparable from ~~t~~his organizational status.

Classes of Bureaucratic Behavior in Educational Organizations

Eight classes of bureaucratic behavior in educational organizations emerge logically from the tri-dimensional theoretical model. Each class represents a distinct category of behavior that can be observed through the interactions (dyadic transactions) of administrative personnel in school organizations. The eight class categories can be labelled as follows:

1. R~~US~~SU -- Rational - Specific - Universalistic
2. RSP -- Rational - Specific - Particularistic
3. RDU -- Rational - Diffuse - Universalistic
4. RDP -- Rational - Diffuse - Particularistic
5. NSU -- Non-rational - Specific - Universalistic
6. NSP -- Non-rational - Specific - Particularistic
7. NDU -- Non-rational - Diffuse - Universalistic
8. NDP -- Non-rational - Diffuse - Particularistic

INSERT TABLE I HERE

Table I presents the distribution of classes of bureaucratic behavior explicitly indicated in ninety OTUs. These data, mounted as specimen or "pieces" of bureaucratic behavior, were selected from the case study materials. Upon inspection all ninety OTUs were found to be classifiable within the theoretical scheme. A cursory examination of the table reveals that at least one OTU fell into ~~every~~ every category of the classificatory system. stet

The table also reveals that there was a total of 66 OTUs mounted from the field data collected at Central Public School District, and a total of 24 OTUs were taken from data collected at Urban University. Of the ninety OTUs, 63 were classified as rational and 27 were non-rational. At one extreme, 47 were rational, specific and universalistic; at the other extreme 22 were non-rational, diffuse and particularistic.

There were 39 of a total of the 66 OTUs of Central Public School Distric that were rational, while 27 were non-rational; 23 were rational, specific, and universalistic, while 22 (almost one-half) were non-rational, diffuse and particularistic.

In regard to the OTUs mounted from the field data of Urban University, all 24 were classified as rational specific and universalistic in each of the three of the dimensions of the scheme — goal direction, role behavior and affectivity. However, when one views the data collected and mounted in 90 OTUs of the field study, it is apparent from this classificatory distribution that approximately one half of the administrative behavior, especially that observed in Central Public School District is non-bureaucratic or at least of a pre-bureaucratic character.

Once the behaviors in the interpersonal relations ("dyadic transactions") were classified, each OTU was then categorized and labelled according to the eight classes of bureaucratic administrative behavior generated by the conceptual scheme. Quintile ranges were employed to account for the varying sizes (the number of dyadic transactions) of the OTUs. This enabled one to classify and then to compare OTUs regardless of the magnitude of behavior present in them.

Returning again to the classification grid for OTU #41, (Chart I) attention is directed to the scoring boxes at the upper right corner. The letters "A", "B", "C" each followed by a positive or negative symbol, correspond to the bureaucratic and pre-bureaucratic polarities of the three dimensions of the interactions. The boxes headed "1x" through "5y" correspond to the structural characteristic in the scheme. Using a scoring system of 0 to 5, (0 meaning no behavior of this type present; 1 meaning that of the dyads in the OTU, between 1 to 20 percent were of this type; 2 meaning that between 21 and 40 percent of the behavior fell into that classification; 3, 41-60 percent; and so on.) The frequency of the occurrences of behavior in each category was converted into quintile scores.

The scoring for OTU #41, then can be read as of all the behaviors present in the "dyads" in the OTU, with reference to their goal direction dimension, between 41 and 60 percent of the behaviors were rational while between 21 and 40 percent were non-rational. In terms of role dimensions, 61 to 80 percent were functionally specific while between 1 and 20 percent were functionally diffuse. Finally, all of the behaviors were particularistic with regard to their affectivity; none having been classified as universalistic. This was the actual classification score since the scores that follow in boxes 1x to 5y describes the organizational context of the behavior, which is determined by the actual job engaged in by the members of the "dyads", and has already been accounted for in the classification.

The use of quintile scores enables one to arrange each of the OTUs along a continuum ranging from a positive pole (bureaucratic) at one extreme, to that of a negative pole (pre-bureaucratic) at the other ✓ extreme. The quintile score would indicate the degree of bureaucratic behavior in the specimen under inspection. By assigning ~~positing~~ positive numbers, 9 0 to $+5$, and negative numbers 0 to -5, for each of the three categories — goal, role and affectivity — it is then possible to compute meaningful quantitative scores for the three dimensions of behavior as indicated in the model.

The highest possible scores on the two poles of the continuum would be $+15$ at one end and -15 at the other. By finding the difference ~~of~~ between the sums of the positive and negative numbers, the relative degree of bureaucracy present in each specimen (OTU) could be calculated. A formula for such a procedure can be stated as follows:

$$BB = \cancel{+}(A + B + C) \quad - \quad (-A) + (-B) + (-C)$$

For example, OTUs #41 and #64 after classification could then be scored by using the above formula.

OTU #41

$$BB = \cancel{+}(3 + 4 + 0) \quad - \quad (2) + (1) + (5)$$

$$= \quad 7 \quad - \quad 8$$

$$BB = \quad -1$$

OTU #64

$$BB = f(5 + 5 + 5) - (0) + (0) + (0)$$

$$= 15 - 0$$

$$BB = +15$$

The application of this quantitative procedure along with others will aid in developing more refined and discriminating classifications of behavior within the OTUs. For example, upon closer inspections of OTUs #41 and #64, after the applications of the quantitative method of scoring them, it becomes apparent that they are quite dissimilar. OTU #41 can now be classified as Rational Specific and Particularistic (RSP). It is an admixture of both bureaucratic and pre-bureaucratic behavior; the score of -1 indicates that it falls almost at the center (zero point) of the continuum. OTU #64, on the other hand, is Rational, Specific and Universalistic (RSU); the score of +15 means that this piece of behavior is "purely" bureaucratic.

INSERT FIGURE 2 HERE

Figure 2 shows the distribution of the degrees of bureaucratic behavior scores in 90 OTU of the study. The OTU are placed along a continuum with scores ranging from +15 to -15; from "purely" bureaucratic behavior to "purely" pre-bureaucratic behavior, respectively. The figure indicates that 27 specimens were scored +15, while 9 were scored -15. Five OTUs were scored at the zero point of the scale, meaning that they contained equal amounts of bureaucratic and pre-bureaucratic in terms of dyadic transactions. The remaining OTUs fell along the continuum with plus and minus scores indicated in the figure. It becomes apparent that the specimens under inspection, when viewed together represent virtually every class category of pre-bureaucratic and bureaucratic behavior.

The classification generated from the model must be conceived as theoretical entities. Nevertheless, from the foregoing analysis, it becomes clear that the concepts herein employed can be specified operationally for research purposes. Moreover, the classifications can be viewed in terms of categoric logic to which statistical concepts and measures may be applied. However more definitive refinement of statistical methods to this initial taxonomic exercise must wait on future developments and applications of this and other conceptual schemes.

Profiles of Bureaucratic Behavior

Taxonomists whose purpose is to develop classifications and then to test them against empirical reality will always find it useful to arrange their data graphically, and then to see how well the data are accounted for by the strategies and theories involved. The emphasis in this instance is upon observing the relationships between concepts employed in the theoretical framework. The graphic presentation of the data places them in bold relief and also dramatizes the essential elements of the theoretical scheme in terms of configurational patterns.

An example of such a graphic presentation is shown by figures 3 and 4. The circles are graphic representations of "slices" of bureaucratic behavior in educational organizations which were taken from the case materials. As such, they are units of specimens of behavior that have been lifted out of the case for "microscopis" inspection in terms of the inner structure of particular units of bureaucratic behavior. Each specimen mounted graphically is much like that of the stop action of a moving picture; accordingly, it cannot be fully comprehended in and by itself; only the internal structure of relationships can be observed and understood. However its relationship to other units of behavior cannot be analyzed. Such "macrascopic" relationships must be viewed and analyzed in the context of the dynamics or "on goingness" of the actions and interactions as each relates to the others in the complexity of the phenomena under investigation.

INSERT FIGURES 3 AND 4 HERE

In figures 3 and 4 the circles are rimmed by the five characteristics of bureaucratic behavior as presented in the theoretical model: hierarchy, specialization, oligarchy, co-optation, and status. The appropriate sub-categories of behavior appear under each of the characteristics. For each sub-category of behavior, a wedge can be seen in respect to the three dimensions of bureaucratic behavior: goal, role and affectivity. If, however, the behavior is bureaucratically rational a plus (+) mark appears at the top of the wedge; if, on the other hand, the behavior is bureaucratically non-rational, a minus (-) mark is indicated for that wedge.

Each wedge in the circle represents the nature of the interactions in the specimen as it relates to the appropriate concepts employed in the scheme. The wedge also corresponds to the scale used in the scoring of OTU as explained earlier in the chapter.

The two profiles as shown in figure 2 and figure 3 are OTUs #41 and #64, respectively. They reveal the patterns of the interpersonal behaviors (administrative dyadic transactions) occurring within these "stop action" pictures. It becomes apparent to the casual observer that these two "slices" or specimens of bureaucratic behavior in educational organizations are markedly different from each other. However, it must be remembered that these two cross sectional pieces of behavior have been lifted from two sets of data: the case materials of the Central School District and the observations conducted at Urban University.

Distribution and Magnitude of Bureaucratic Behavior

The distribution and magnitude of bureaucratic behavior in OTUs #41 and #64 are also shown graphically in figures 5 and 6. The figures include each of the characteristics of the conceptual framework, along with the sub-categories. At the left side of the graph are plus (+) marks at the top and minus (-) marks at the bottom. These indicate bureaucratic and pre-bureaucratic behavior, respectively. At the bottom of the graphs are the codes for the dimensions of the behavior; goal, role, and affectivity. When the administrative dyads that have been classified and scored, each OTU can be placed on the graph. OTUs #41 and #64 reveal sharply different patterns in terms of the distribution and the magnitude of particular interactions within the inner structure of these "pieces" or units of behavior. Again, they also in-

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dicate that there may be significant differences in bureaucratic behavior between Central School District and Urban University.

INSERT FIGURES 5 AND 6 HERE

The use of graphs can be thought of as an important technique or device for the taxonomist. The accumulation of graphic representations of units of behavior for matching and analytic purposes not only gets at the applicability of the concepts but also determines the discrimination force of the variety of variables employed by the conceptual scheme.

These illustrations of the utility of these types of graphic analyses of empirical evidences, especially in taxonomic research projects, suggest that they performed several functions: (1) They provide the taxonomists with a series of "stop action" pictures of the categories of behavior classified from the real world; (2) they give one in part clues and insights regarding the "shape" of the behaviors occuring within the structure; (3) they show the interrelations between and among the concept employed in the theoretical scheme; (4) they serve as a check of the utility of the model; (5) they show the discriminating power of concepts and variables; and finally, (6) they provide some base lines for deriving relevant hypotheses for testing and further research.

SUMMARY

By way of summary, it should be recalled that the purpose of this research project was to develop a taxonomy through the classification of bureaucratic behavior in complex modern organizations. We began our investigation with the assumption that a taxonomy is sets of classifications which are ordered and arranged, and are consistent with a sound theoretical view. The conceptual strategy selected to develop one of the important aspects of a classification of behavior in modern organizations was based on bureaucratic theory.

It was the view of this taxonomist that bureaucratic theory would provide a unified view, and a method of identifying, observing, classifying, explaining and predicting relationships between the phenomena of behaviors in formal organizations. In other words, bureaucratic theory was selected because: (1) it is a comprehensive theory for dealing with organizational behavior; (2) its dimensions are well grounded in the behavioral sciences -- sociology, social psychology, anthropology, political science and economics; (3) it offers strategic heuristic advantages, especially for classificatory purpose as one moves toward a taxonomy of organizational behavior.

Thus, to put this another way it may be said that the subject of this investigation is the classification of organizational behavior; the subject of our taxonomy, as is the case of all taxonomies, is these classifications; indeed, the theoretical strategy upon which the subjects of investigation rest is bureaucratic theory.

Because classes of a taxonomy may not be defined by their membership properties but only by their relationship, this study began by grouping together individual concepts of bureaucracy into a system of relationships. The problem then became one of understanding groupings and their relationships in conceptual terms. This enables one to make generalizations and to extend knowledge in the behavioral sciences from this mode of inquiry. This is to say that the construction of classes of administrative behavior within the framework of bureaucratic theory may serve as important advances in each of the behaviorial sciences, including education, concerned with explaining and generalizing about the behavior of humans in complex modern organizations.

There are many generalizations inherent in this research project that are implicit in the relationships between the concepts employed in the scheme for classifying behavior of administrators in organizations. At this summary point of an initial effort to develop a taxonomy, it might be suggestive to put these generalizations in the form of a series of theoretical propositions. These propositions may serve as summary statement that could become research "benchmarks" for generating useful researchable hypotheses in organizational behavior of school administration. The six statements listed below represent some examples of fruitful and relevant propositions:

1. School administrators whose organizational behaviors are rational with regard to goal directions tend to delegate more authority than do school administrators whose organizational behaviors are non-rational.

2. School administrators whose organizational behaviors are functional specific with regard to role dimensions tend to handle the "flow of authority" in their school organizations more rationally than do school administrators whose behaviors are functionally diffuse.

3. School administrators who organizational behaviors are universalistic, that is, based on impersonal considerations, in their interactions with staff members, tend to use less power and to evoke fewer sanctions for compliance than do school administrators whose organizational behaviors are particularistic and whose interactions with staff are based on personal considerations.

4. Administrative behavior that depends upon tradition and the charisma of the "man at the top" of the hierarchy as the source of authority in the school organization tends to generate more role conflict among its

members than administrative behavior that depends upon "legal" and "official" rules as the source of authority.

5. School administrators whose behaviors are particularistic in affectivity dimensions tend to co-op -- select and promote -- personnel that is "indifferent" and accordingly have low morale to the goals of the school organization, while school administrators whose behaviors are universalistic tend to co-op -- select and promote -- personnel that is committed and accordingly have high morale to the goals of the school organization.

6. School administrators whose behaviors are rationally based tend to allocate greater prestige and greater amounts of privileges to its staff personnel than do school administrators whose behaviors are non-rational.

Finally, some examples of relevant hypotheses in respect to the rapidly growing theories and knowledge in educational administration can be generated from this taxonomy. The hypotheses emerging from this study are presented to demonstrate the utility of this tri-dimensional theoretical scheme. The effort here is to show the relationship between and among theories and concepts and those of other theoretical schemes now in current usage in educational administration. The following hypotheses therefore are given as example of some areas of needed research in educational administration:

1. that if the "dyadic transactions" (communications) between school administrators and the members of their organizations are particularistic and rests primarily on traditional and charismatic behavior, then there will be a greater tendency to deny the authority of those administrators than those whose communications are universalistic and based on "legal"-written rules of the organization.

2. that if school administrators used their offices as autonomous in decision-making then the behavior of subordinates will tend to exhibit greater dysfunctional behavior in role expectations than will the behavior of subordinates whose administrators allocates authorities, specify the scope and function of duties of subordinates.

3. that if school administrators co-op -- recruit, select and promote -- personnel in their organization with particularistic affectivity, then there is likely to be a greater proportion of "indifferents" and

fewer "*upward mobiles*" in their school organizations than among school administrators who co-op personnel with *universalistic affectivity*.

4. that if administrators are *rational* in their actions in terms of organizational goals, then there will tend to be a greater amount of *compliance* in the behavior of subordinates than among those whose administrative behaviors are *non-rational* in terms or organizational goals.

5. that administrators of *larger school organizations* tend to run their organization with greater degrees of bureaucratization than do administrators of small school organizations.

6. that administrators in rural (*gemeinschaft*) school districts tend to score lower in bureaucratic *behavior* than do school administrators of *urban* (*gesellschaft*) school districts.

7. that when there is an increase in *specialization* in school organizations then the effect will likely result in:
    (a) a "flatter" *status* structure
    (b) a shift in *decision-making* toward lower levels of the structure
    (c) a decrease in *authority* at the top of the structure

(d) a lessening of conflict in role expectations

8. that when the behavior of administrators are *non-rational*, and *functionally diffuse* then the effects will tend toward:

(a) "*taller*" organizational structures

(b) smaller *spans of control*

(c) the locus of decisions at higher points in the *status structure*

9. that the more *heterogeneous* the membership of a school organization, the higher the degree of bureaucratic *administrative behavior* of the organization.

10. that the greater the number of persons in a school organization with personality need dispositions for power, the greater will be the tendency for the organizational *hierarchy* to be "taller" than when there is a small number of persons with such needs dispositions.

11. that the more adaptative and flexible the *personality* type a school administrator has in respect to playing "tough-minded" *roles* in school organizations, the more likely his behavior will be *rational* than *non-rational* in his organizational decisions.

(d) a lessening of conflict in role expectations

8. that when the behavior of administrators are non-rational, and functionally diffuse then the effects will tend toward:

(a) "taller" organizational structures

(b) smaller spans of control

(c) the locus of decisions at higher points in the status structure

9. that the more heterogeneous the membership of a school organization, the higher the degree of bureaucratic administrative behavior of the organization.

10. that the greater the number of persons in a school organization with personality need dispositions for power, the greater will be the tendency for the organizational hierarchy to be "taller" than when there is a small number of persons with such needs dispositions.

11. that the more adaptative and flexible the personality type a school administrator has in respect to playing "tough-minded" roles in school organizations, the more likely his behavior will be rational than non-rational in his organizational decisions.

12. that administrators who engage in informal relations with members of their organizations that are particularistic in affectivity are more likely to produce a greater amount of status anxiety among the members than do administrators whose informal relations are universalistic.

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Footnotes

[1] Max Weber, *The Theory of Social and Economic Organization*, trans. Henderson and Talcott Parsons, edited by Talcott Parsons. New York: Oxford University Press, Inc., 1947. Also, for a careful assessment of Max Weber: and his works, see H. H. Gerth and C. Wright Mills, *From Max Weber: Essays in Sociology*. New York: Oxford University Press, Inc., 1946.

[2] H. H. Gerth and C. W. Mills, *Op. Cit.*, pp. 55-61.

[3] *Ibid.*, p. 214.

[4] Robert Presthus, *The Organization Society*, New York: Alfred Knopf, 1962, p. 5.

[5] ~~Peter M. Blau~~ all, *Bureaucracy in Modern Society*, New York: Random House.

[6] *Ibid.*, pp. 24-25.

[7] Robert K. Merton, *Social Theory and Social Structure*, revised edition. Glencoe, Illinois: The Free Press, 1957, p. 196.

[8] *From Max Weber*, *Op. cit.*, Chapters 8,9.

[9] *The Organizational Society*, ~~Presthus~~, *Op. cit.*, chapter 2.

[10] Ibid., p. 34.

[11] Arthur P. Coladarci and Jacob W. Getzels, The Use of Theory in Educational Administration, Monograph No. 5. School of Education, Stanford University, 1955.

[12] Ibid., p. 15.

[13] Ibid., p. 16.

[14] For a fuller discussion of characteristics of bureaucracy in respect to rational authority see Gerth and Mills, Op. cit., pp. 196-264.

[15] Ibid., pp. 245-252.

[16] Robert K. Merton, Op. cit., pp. 197-200; also see, Talcott Parsons Essays in Sociological Theory. Glencoe, Illinois, The Free Press, 1949, pp. 185-199.

[17] Coladarci and Getzels, Op. cit., p. 19.

[18] Ibid., p. 19.

[19] Ibid., p. 23; The utility of the concepts, "Universalism" and "Particularism," in observing and explaining bureaucratic administrative behavior in modern organizations, is dealt with extensively by Parsons, Op. cit., Chapters 5 and 7.

[20] Conceptual definitions of the terms employed in the model appear in an Appendix of this chapter.

[21] _Op_. _cit_., pp. 15-16; also see, J. W. Getzel's "A Psycho-Sociological Framework for the Study of Educational Administration," _Harvard Educational Review 22_ (1952), pp. 235-246.

INSERT PAGE 20

CHART I

CLASSIFICATION OF ADMINISTRATIVE BEHAVIOR IN EDUCATIONAL ORGANIZATIONS

O.T.U. # 41

DYADS 1 TO 5

O.T.U. CLASSIFICATION

A+	A-	B+	B-	C+	C-	1X	1Y	2X	2Y	3X	3Y	4X	4Y	5X	5Y
3	2	4	1	0	5	2	5	5	5	4	1	0	5	1	0

	STRUCTURAL CHARACTERISTICS	1 HIERARCHY		2. SPECIALIZATION		3. OLIGARCHY		4. CO-OPTATION		5. STATUS	
DIMENSIONS OF THE INTERACTIONS	POLARITIES	X RANK	Y LINE STAFF	X OFFICE	Y EXPECTATION	X POWER	Y SANCTION	X SELECTION	Y SUCCESSION	X PRESTIGE	Y PRIVILEGE
A GOAL DIRECTION	RATIONAL +	4	1,3,4	1,3,4	1,3,4	1,3			1,3,4		
	NON-RATIONAL −	5	2,5	2,5	2,5	2,5	5		2,5	4	
B ROLE	FUNCTIONALLY SPECIFIC +	4	1,2,3,4	1,2,3,4	1,2,3,4				1,2,3,4	4	
	FUNCTIONALLY DIFFUSE −	5	5	5	5	5	5		5		
C AFFECTIVITY	UNIVERSALISTIC +										
	PARTICULARISTIC −	4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	5	5		1,2,3,4,5	4	

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CHART II

CLASSIFICATION OF ADMINISTRATIVE BEHAVIOR IN EDUCATIONAL ORGANIZATIONS

O.T.U. # 64

DYADS 1 TO 32

O.T.U. CLASSIFICATION

A+	A-	B+	B-	C+	C-	1X	1Y	2X	2Y	3X	3Y	4X	4Y	5X	5Y
5	0	5	0	5	0	5	5	5	5	1	1	5	0	1	1

DIMENSIONS OF THE INTERACTIONS	STRUCTURAL CHARACTERISTICS	1 HIERARCHY		2. SPECIALIZATION		3. OLIGARCHY		4. CO-OPTATION		5. STATUS	
	POLARITIES	X RANK	Y LINE STAFF	X OFFICE	Y EXPECTATION	X POWER	Y SANCTION	X SELECTION	Y SUCCESSION	X PRESTIGE	Y PRIVILEGE
A GOAL DIRECTION	RATIONAL +	1 to 32	1 to 32	1 to 32	1 to 32	13, 31	13,15, 31	1 to 32		9,15,25, 27,31,32	2,9,15, 17,31
	NON-RATIONAL −										
B ROLE	FUNCTIONALLY SPECIFIC +	1 to 32	1 to 32	1 to 32	1 to 32	13,31	13,15,31	1 to 32		9,15,25, 27,31,32	2,9,15 17,31
	FUNCTIONALLY DIFFUSE −										
C AFFECTIVITY	UNIVERSALISTIC +	1 to 32	1 to 32	1 to 32	1 to 32	13, 31	13,15,31	1 to 32		9,15,25, 27,31,32	2,9,15, 17,31
	PARTICULARISTIC −										

INSERT PAGE 26

TABLE I

Distribution of Bureaucratic Behavior by Class Categories appearing in Ninety Operational Taxonomic Units of Field Study for Central Public School District and Urban University

Educational Organizations	Class Categories RATIONAL				NON-RATIONAL				Totals
	RSU	RSP	RDU	RDP	NSU	NSP	NDU	NDP	
Central Public School District	23	7	1	8	2	2	1	22	66
Urban Univ.	24	-	-	-	-	-	-	-	24
Totals	47	7	1	8	2	2	1	22	90

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FIGURE 2

The Distribution of the Degrees of Bureaucratic Behavior in Ninety OTUs

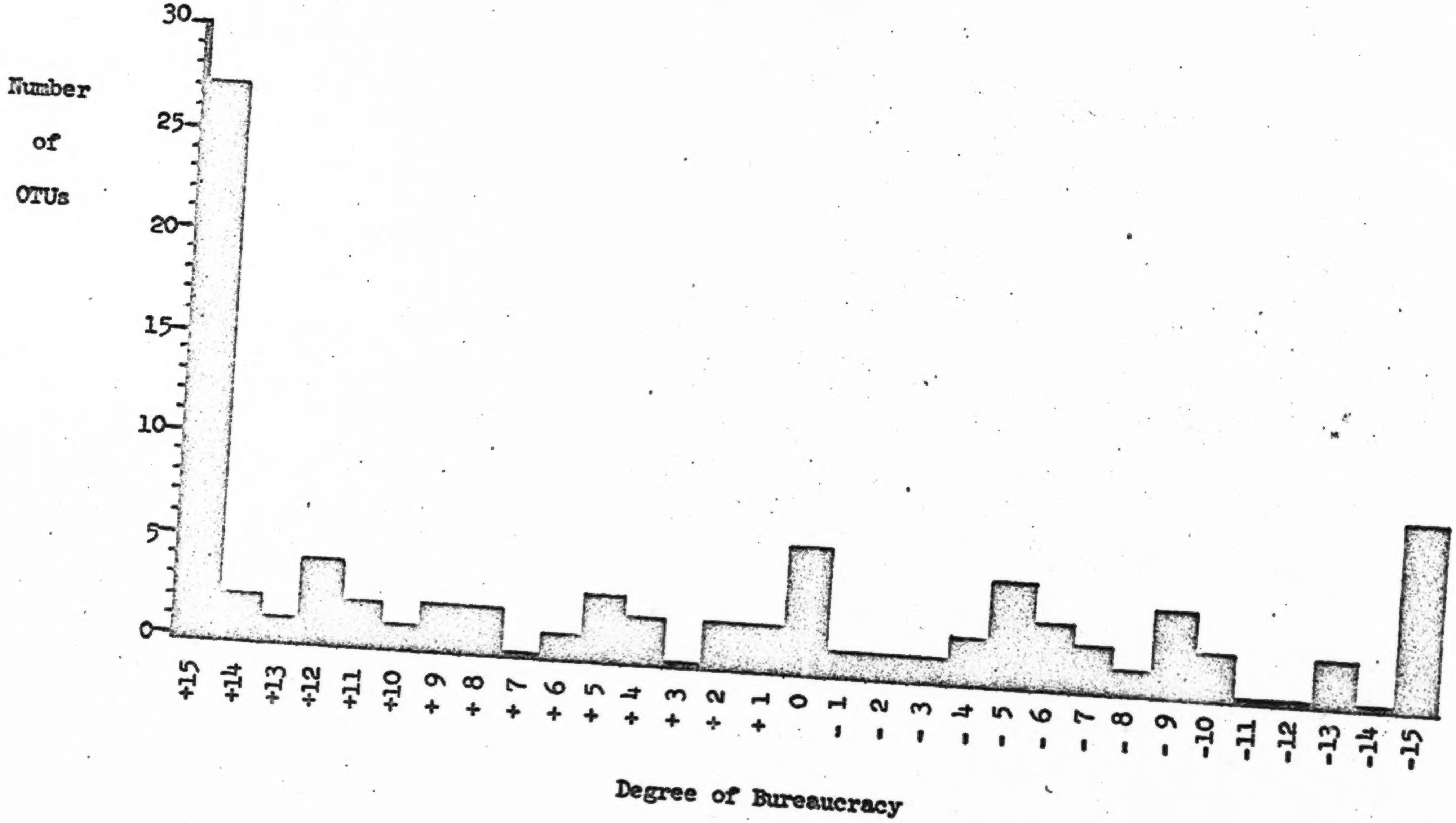

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Figure $\frac{3}{X}$

PROFILE OF BUREAUCRATIC BEHAVIOR WITHIN AN O.T.U.

O.T.U. # 41

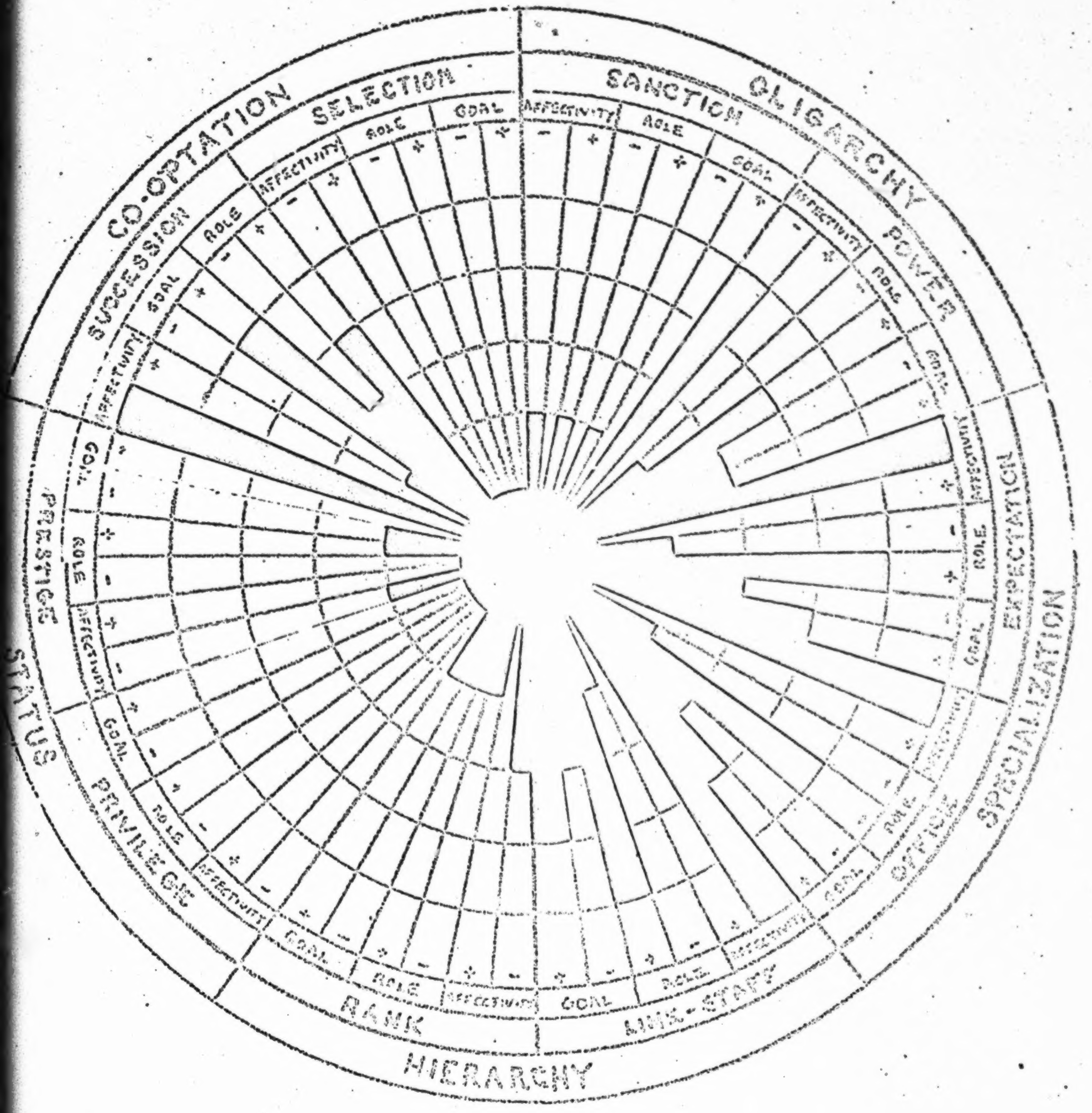

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Figure 4

PROFILE OF BUREAUCRATIC BEHAVIOR WITHIN AN O.T.U.

O.T.U. #64

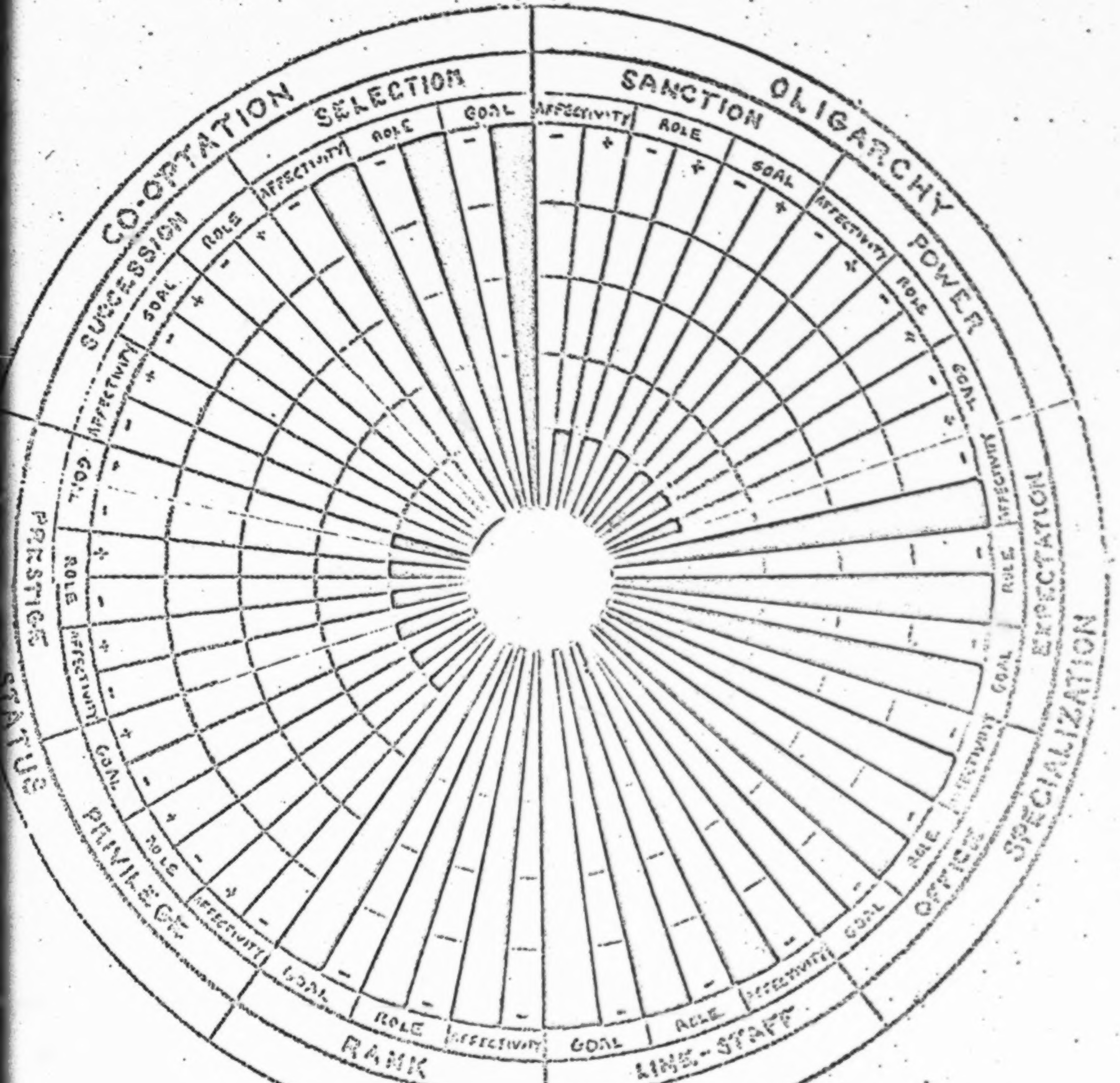


Figure X INSERT PAGE

THE DISTRIBUTION AND MAGNITUDE OF BUREAUCRATIC BEHAVIOR WITHIN O.T.U. #41

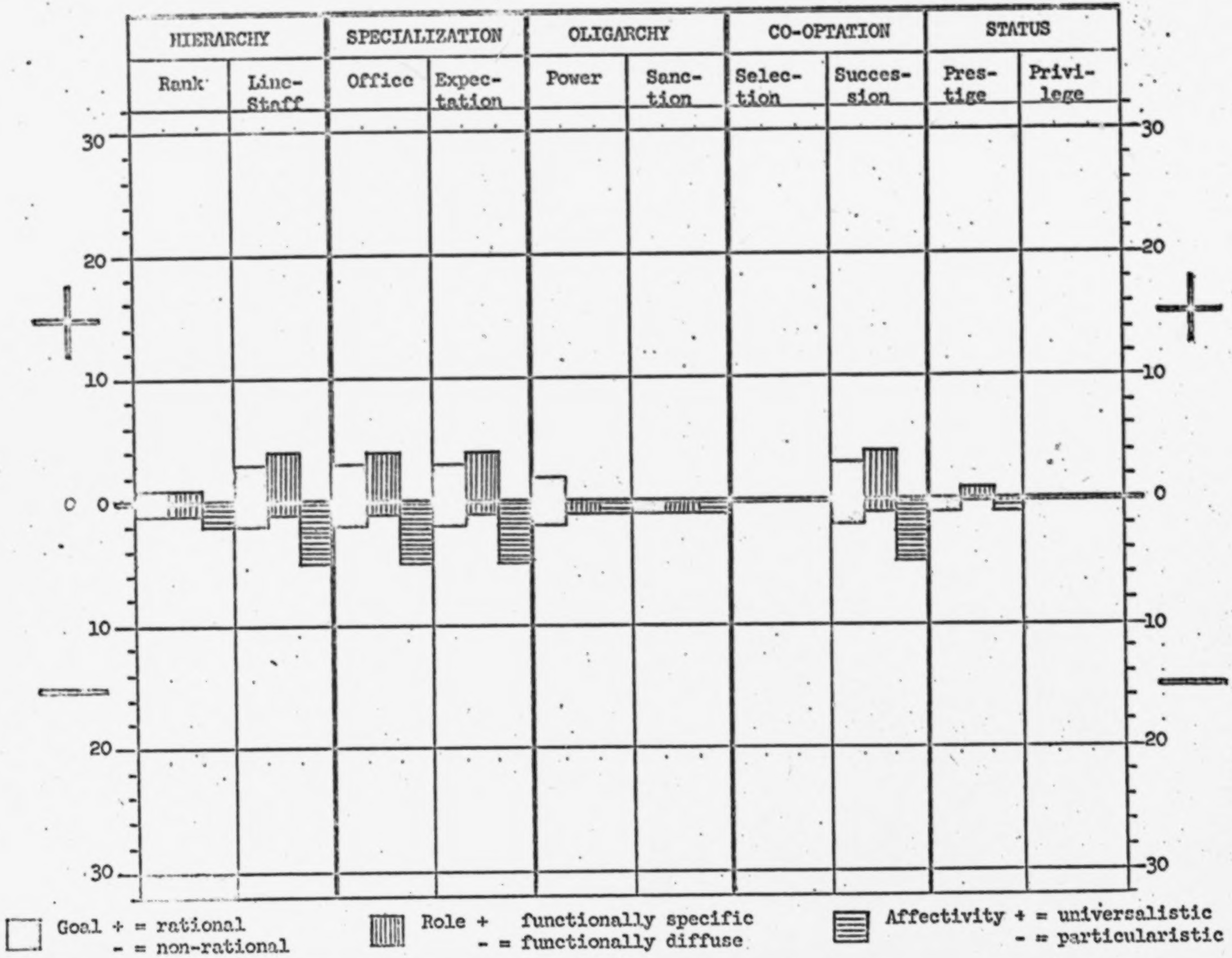
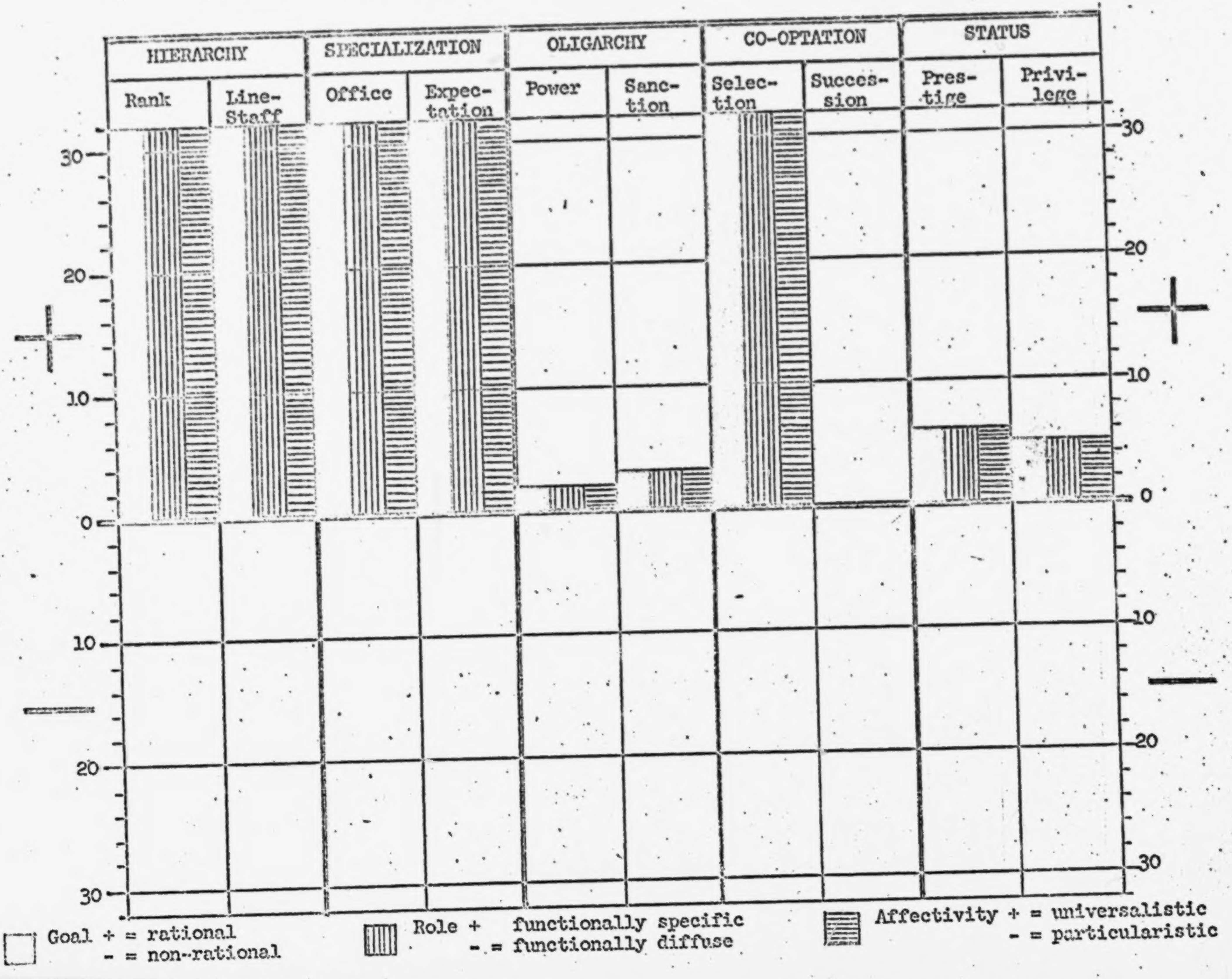


Figure [illegible]

THE DISTRIBUTION AND MAGNITUDE OF BUREAUCRATIC BEHAVIOR WITHIN O.T.U. #64



CHAPTER VI

SYSTEMS THEORY AND TAXONOMIC INQUIRY INTO ORGANIZATIONAL BEHAVIOR IN EDUCATION

by Glenn L. Immegart[1]

That systems theory was used as one of the theoretical strategies in this research is understandable if for no other reason than "people tend to think in terms of systems"[2] and, at present, systems approaches and conceptualizations are in vogue. The rationale for the use of this body of theory is, of course, more logical in origin. Systems notions have proved of value as theoretical constructs,[3] as vehicles for understanding organizational phenomena,[4] and as a classification or taxonomic framework.[5] Systems theory has, therefore, already exhibited some relevance for the matters at hand and has given indication of even greater potential in a vast realm of applications with behavioral phenomena.

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[1] The writer wishes to acknowledge the contribution of Mr. Frank Pilecki who served as a graduate assistant in the course of this research. Not only did Mr. Pilecki play a vital role in the conduct of the research, but he also assisted greatly in the planning and formulation of this chapter.

[2] Adapted from Daniel E. Griffiths, "Use of Models in Research," *Educational Research: New Perspectives*, Danville, Illinois: Interstate Printers, 1963, p. 126.

[3] See, for example, Daniel E. Griffiths, "The Nature and Meaning of Theory," in *Behavioral Science and Educational Administration*. N.S.S.E. Yearbook, Part II. Chicago: University of Chicago Press, 1964, pp. 95-118; James G. Miller, "Toward a General Theory for the Behavioral Sciences," *American Psychologist*, Vol. X (1955), pp. 513-531; Gordon Hearn. *Theory Building in Social Work*. Toronto: University of Toronto Press, 1958; and Karl Menninger. *The Vital Balance*. New York: The Viking Press, 1963.

Before looking directly at the theoretical base used in this inquiry, it should be pointed out that no explicit, comprehensive formulation of systems theory exists. Rather, there are a number of closely related, more or less complete, more or less rigorous, and more or less empirically verifiable, theories (with a small "t") emanating from von Bertalanffy's conception of General Systems Theory,[6] the science of cybernetics,[7] and the operations research movement.[8] The diverse sources of systems ideas should in no way be disconcerting since the similarities of resultant theories give evidence of their potential for eventual unification into a Theory (with a capital "T") which will hopefully "contain universal principles applicable to all systems."[9]

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[4] See, for example, Stanford L. Optner. Systems Analysis for Business and Industrial Problem Solving. Englewood Cliffs: Prentice-Hall, Inc., 1965; and F. K. Berrien, "Homeostasis in Groups," in General Systems, Yearbook of the Society for General Systems Research, Vol. IX, 1964, pp. 205-218.

[5] See, for example, N. M. Smith, and M. C. Marney, "The Domain of Adaptive Systems: A Rudimentary Taxonomy," in General Systems. op. cit. pp. 107-134.

[6] Ludwig von Bertalanffy, "General Systems Theory," Main Currents in Modern Thought, 11 (1955), p. 77.

[7] Norbert Wiener. The Human Use of Human Beings. Garden City, N. Y. : Doubleday Anchor Books, 1956; and W. R. Ashby. An Introduction to Cybernetics. New York: John Wiley and Sons, 1956.

In this research a number of systems theories were drawn upon. The theoretical base is necessarily eclectic and indebted to a variety of researchers and scholars. By using systems concepts drawn from a number of sources, one is not hampered by the usual problems in combining theories because, in fact, systems theories, in spite of their origin, are remarkably similar and depart from each other more in terms of emphasis or focus than substance or form.

Systems Theory

In explicating the theoretical base for this taxonomic inquiry into organizational behavior in education, definition of the term system and clarification of basic systems concepts are essential first considerations. Numerous system definitions have been advanced and can be found in the growing literature on systems.[10] In this chapter use of the term conforms with the definition enunciated by Hall and Fagan: "A system is a set of objects together with relationships between the objects and between their attributes."[11] This definition was selected not only because of the frequency of its use in the systems' literature but also because it contains the basic elements embraced by most system definitions. Further, this definition is relatively easily grasped by those not familiar with systems concepts or the systems mode of thought. If additional definitional clarification is needed, Grinker's delineation of a system as "some form in structure or operation, concepts or function, composed of united and integrated parts" should be adequate.[12] These definitions are quite compatible and mutually inclusive.

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[8] C. W. Churchman, and Others. Introduction to Operations Research. New York: John Wiley and Sons, 1957

[9] Adapted from von Bertalanffy, *op. cit.*, p. 1.

The term system can be used to refer to a vast array of things

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[10] See O. R. Young, "A Survey of General Systems Theory," in General Systems. op. cit. pp. 61-82, for a comprehensive listing of definitions and sources of definitions, and a generally good classification of systems concepts.

[11] A. D. Hall, and R. E. Fagen, "Definition of System," in General Systems. Yearbook of the Society for General Systems Research, Vol. 1, 1956, p. 18.

[12] Roy R. Grinker. Toward a Unified Theory of Human Behavior. Basic Books, 1956, p. 370.

from the smallest "whole" to the total universe. There are value systems, number systems, solar systems, school systems, spacecraft systems, and even betting systems. Or, viewed in another way, as Miller notes, there are conceptual systems, concrete systems, and abstracted systems.[13] In any event, large or small, simple or complex, concrete or abstract, all systems exhibit certain properties:[14]

1. All but the smallest systems have sub-systems.
2. All but the largest systems have supra-systems.
3. All systems have factors that affect the structure and function of the system. Factors within the system are variables; factors in the system's environment are parameters.
4. All systems have boundaries which are more or less arbitrary demarcations of that included within and that excluded from the system.
5. All systems have environment which is everything external to (without the boundary of) the system.
6. All systems exist in time-space.

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[13] James G. Miller, "Living Systems: Basic Concepts," Behavioral Science, X (July, 1965), pp. 201-209.

[14] Essentially from Griffiths, op. cit., pp. 116-117; and Hearn, op. cit., pp. 44-50.

7. All systems tend toward entropy, a state of randomness, disorder, and inertia.

There are two general kinds or types of systems--the "open" system and the "closed" system. Open systems are those which exchange matter and energy with their environment. Closed systems are isolated from and not related to their environment. All closed systems characteristically move more or less directly toward entropy, actually a "death-state," while open systems by virtue of their ability to capitalize on their environment can combat entropy and thus can exist in a dynamic life-state, a "growth-state," typified by order, differentiation, variation, and increasing complexity. Since this research is concerned only with open systems, the theoretical base is derived from theories of open systems.

Existing theories evidence the variety of ways open systems can be dimensionalized and studied. Weiss, for example, investigated systems in terms of structure and function.[15] Optner has noted systems can be examined in terms of subsystem (microscopic) or outcome (macroscopic) analysis.[16] And, Miller has observed that systems can be viewed in terms of their components, form of organization, or processes (e.g., steady state or life history).[17] Such ways of looking at systems illustrate the various perspectives used in the formulation of existing open system theories. Resultant theories are neither mutually exclusive nor all-inclusive, and at present to maximize the understanding of a system, a multi-theory approach is advantageous, if not essential. The precise advantages of the multi-perspective, eclectic approach used in this research will be set forth in the next section on classification strategy and the specific classification schemes used. First, however, the overall theoretical base needs to be described.

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[15] Paul Weiss, "Animal Behavior as System Reaction: The Orientation Toward Light and Gravity of the Resting Postures of Butterflies," in General Systems. Yearbook of the Society of General Systems Research, Vol. II, 1957, pp. 1-44.

[16] Optner, *op. cit.*, p. 28.

Review of systems literature has revealed essentially four distinct theoretical approaches toward conceptualizing systems. They are:

1. Comprehensive systems theories or "theories of the whole"- These theories focus generally and often subjectively on total or "whole" systems and their obvious components, the components' attributes, and the relationships between the components and their attributes.[18]

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[17] James G. Miller, "Living Systems: Structure and Process," Behavioral Science, X (October, 1965), pp. 337-338.

[18] See, for example, Hall and Fagen, op. cit., pp. 18-28

2. "Process" or subsystem theories- Theories of this type are concerned with microscopic analysis and focus on the processing of inputs through system subsystems into system output.[19]

3. Theories of system properties- These theories represent macroscopic analysis and derive from the recurring properties and states evinced in the life-space of a wide variety of systems.[20]

4. Output theories or output analysis- Theories of this type focus on the outcomes or products of system action relative to their impact on the system and/or its environment.[21]

Together these four categories of theoretical formulations constitute the theory base for this systems approach to taxonomic inquiry into organizational behavior in education.

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[19] See, for example, Ashby, op. cit.; Optner, op. cit., pp. 36-51 (in particular); and Miller, "Living Systems: Structure and Process," op. cit.

[20] See, for example, Hearn, op. cit., pp. 43-51: Griffiths, op. cit., pp. 116-118; and George S. Maccia, "An Educational Theory Model: General Systems Theory," The Ohio State University Center for the Construction of Theory in Education, Occasional Paper 62-126, 1962.

[21] See, for example, Optner, op. cit.; and Edgar H. Schein. Organizational Psychology. Englewood Cliffs: Prentice-Hall, Inc., 1965, pp. 96-106.

System Theories of the Whole- Systems by definition are units or wholes and an obvious advantage of the concept of system is its inherent concern for totality rather than isolated aspects or selected parts of wholes.[22] In taxonomic research, especially in the early stages relative to a range of phenomena, it is imperative to be cognizant of the entire entity to be classified. Selected parts or sets of parts of the whole may or may not be characteristic or representative of the entity per se. Systems, as entities, are composed of components or parts but take their unique meaning from these components and their attributes and the relationships that exist between these components and attributes.

In behavioral units (or systems) such as those which can be found in educational organizations, there are obvious components such as actors, inputs, organization, and output, and attributes of these components such as characteristics and loci of actors and input, organizational mechanisms and sub-systems, and affective or productive resultants or outcomes. Such components and their attributes can be linked in an infinite variety of ways and their relationships in terms of this linkage relative to output or the products of system action form one way of looking at a system. "Wholes" or organizational behavioral units can be represented or conceptualized in terms of categories derived from relevant general system concepts such as actors, input, organizational mechanism(s), organizational subsystem(s), output, and locus or loci of forces to give meaning to otherwise amorphous entities and to enable them to be systematically compared. Comprehensive or inclusive systems theory can provide a means for viewing systems, reducing them to manageable units, and classifying them according to theoretically derived categories.

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[22] Hall and Fagen, op. cit., p. 28.

Such theory, however, has somewhat limited utility since it tends not to reduce ambiguity, does not minimize subjectivity, and, due to the complexity of most meaningful systems, tends to gloss over many important and specific system characteristics. Obviously to maximize classificatory power, more precise and detailed theoretical constructs are also needed to augment this kind of theory in order to achieve the goals of taxonomic research.

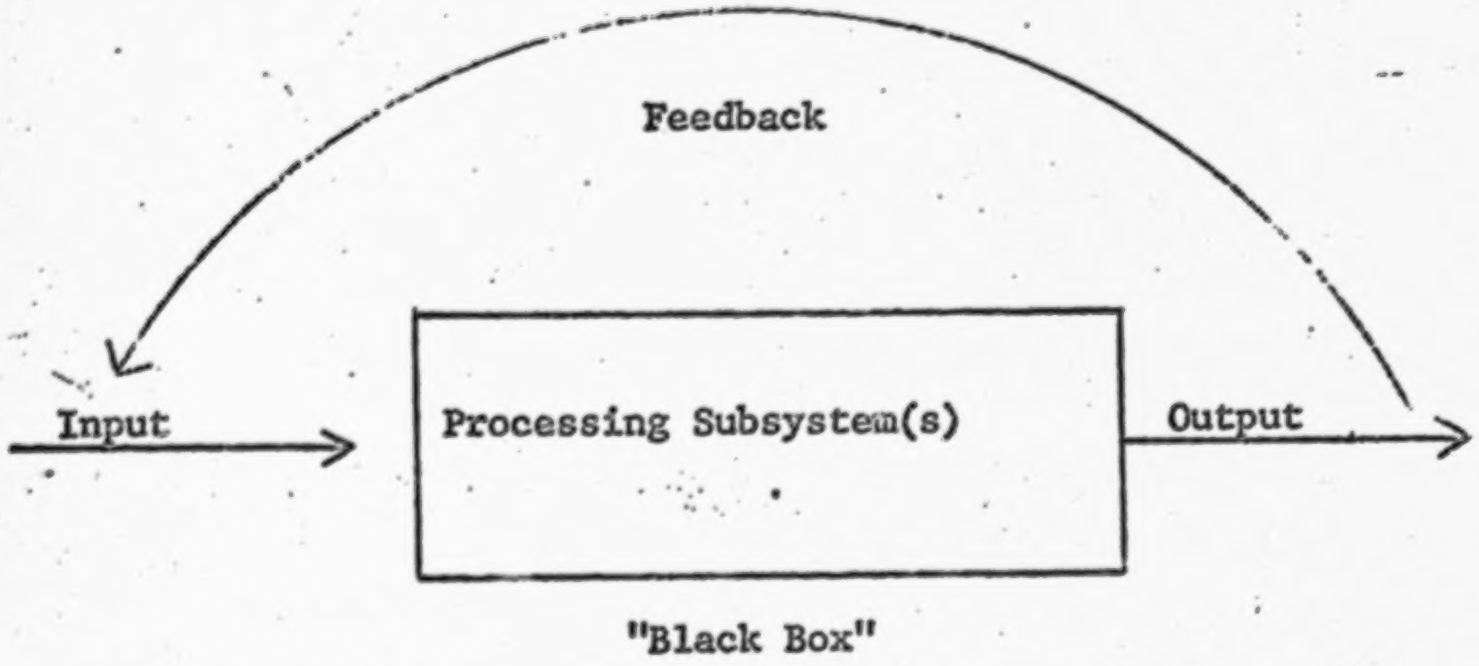
Process Systems Theory-. The essence of systems as revealed by all forms of systems theories is the input-output relationship. Process theories are concerned precisely with this aspect of the total system concept. They deal with the transformation of inputs through processing subsystems into outputs and the resulting effect of output on subsequent input in terms of feedback. The classic "black box" conceptualization of a system illustrates this type of theory .

graphically.[23]

Figure 1

The "Black Box" model of the

basic input-output system.


Feedback
Input
Processing Subsystem(s)
Output
"Black Box"

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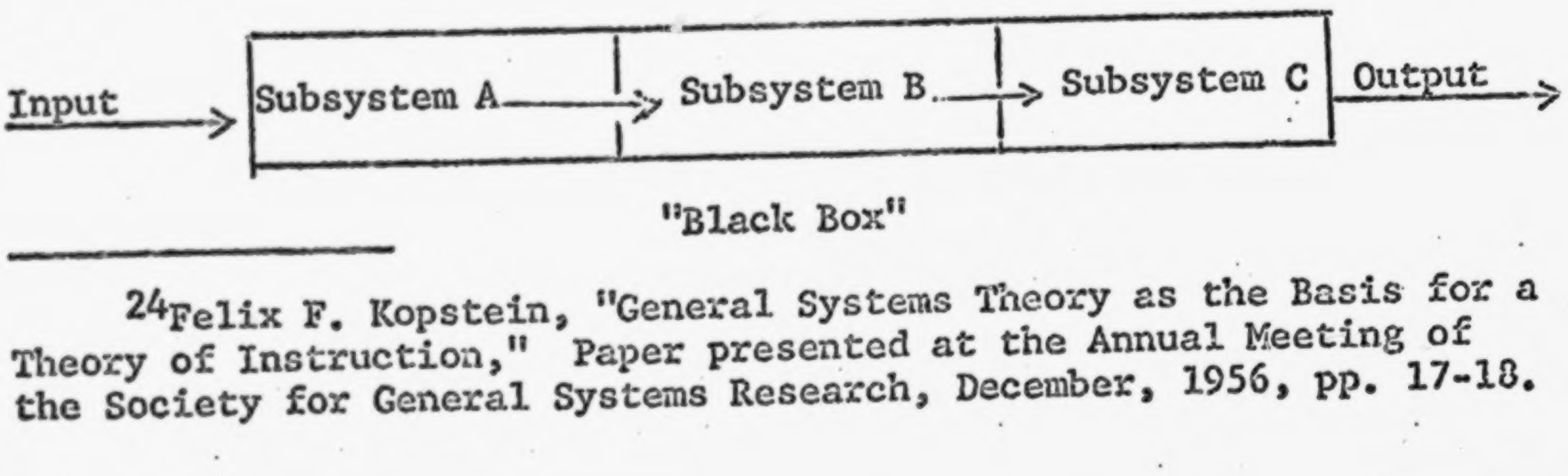
[23] Ashby, op. cit., Chapter 6

According to these theories inputs in the form of operands (those inputs which are to be processed) and operators (those inputs which are to do the processing)[24] are transformed through functional subsystems into output (outcomes or products of system action). Results of system action are invariably evaluated in open systems and such information in the form of feedback is channeled back into the system and affects future system activity. To some extent output potentially includes products, affectivity, and feedback, and output in continuous time-space becomes system input relative to future system activity.

The above simple model fails, however, to reveal fully the dynamic and potential of process systems theories. Within the context of an organizational entity, numerous input-output processing subsystems exist and often more than one subsystem is used in transforming input into output. The following figure illustrates this possibility.

Figure 2

The basic input-output system model illustrating the linkage of multiple processing subsystems.



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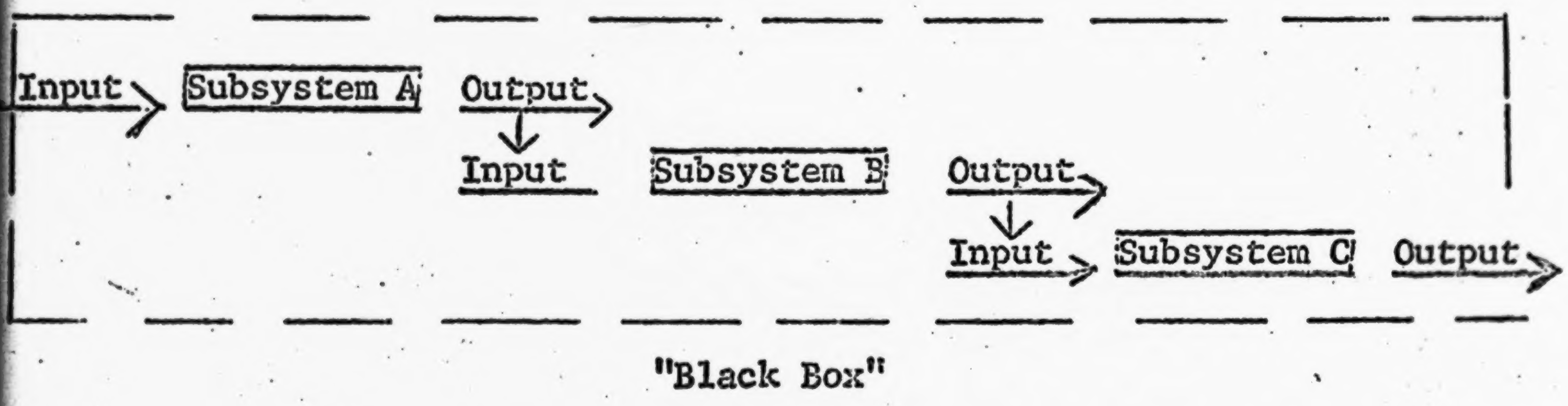
[24] Felix F. Kopstein, "General Systems Theory as the Basis for a Theory of Instruction," Paper presented at the Annual Meeting of the Society for General Systems Research, December, 1956, pp. 17-18.

Each of the processing subsystems is, in effect, an input-output system in its own right and could as well be represented in the following way:

Figure 3

The linkage of subsystem input
and output relative to the basic
input-output system model.

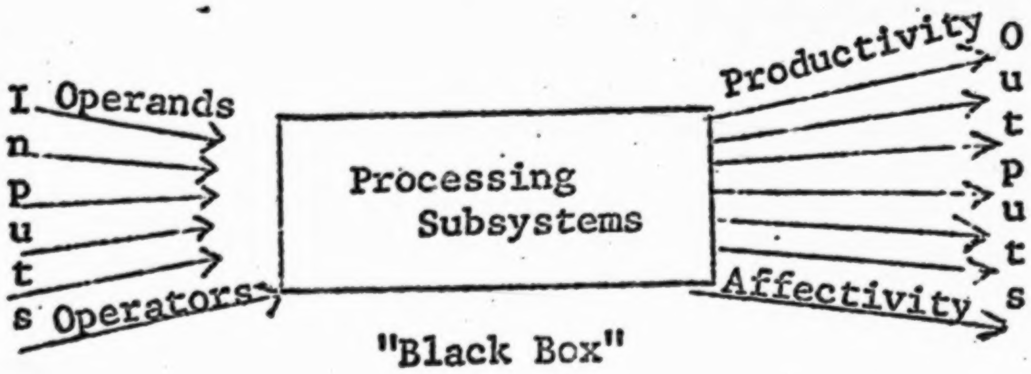

Input
Subsystem A
Output
Input
Subsystem B
Output
Input
Subsystem C
Output
"Black Box"

All but the most restricted system processing can, therefore, be sub-divided into definite input-output subsystems, and further, as seen in the above figure, system ouput is linked directly to or becomes system input for new subsystem or system functioning.

Also, as stated above, there are both operand and operator categories of input. Input is not a single quantity but is rather multi-dimensional. Likewise, output is as well multi-dimensional and can be categorized in terms of productivity and affectivity. This is illustrated in the following figure:

Figure 4

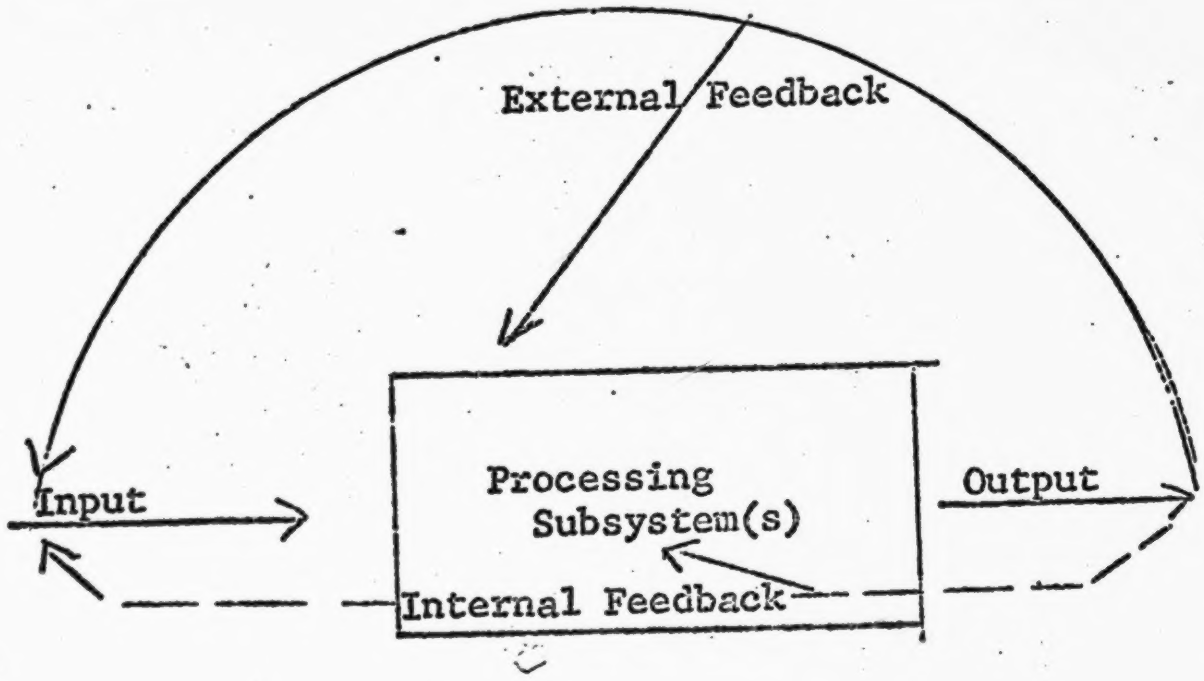
The multi-dimensionality of input
and output in the basic input-
output system model.


Inputs
Operands
Operators
Processing Subsystems
"Black Box"
Productivity
Affectivity
Outputs

Finally, feedback (actually an output phenomenon) can be considered in greater detail in terms of its effect on system functioning. Not only is there internal system feedback or evaluative information occurring within a system but also since open systems exist and function within an environment, they characteristically receive external feedback resulting from environmental evaluation of system action. Both internal and external feedback affect future system action in terms of input and control over subsystem processes. The following figure illustrates these kinds, and functions, of feedback.

Figure 5

The basic input-output system model showing internal and external feedback and their effect on input and subsystem processes.



Since the potential forms of input and output are infinite in scope and a finite but extensive variety of processing subsystems can be identified in any sizeable open system, characterization in terms of process theories offers a fruitful approach for taxonomic research. Through this theoretical perspective not only can an extensive number of aspects or attributes of a system be focused upon but also their linkage and relationships can as well be scrutinized. Process systems theories provide both a comprehensive and detailed means for characterizing systems. The approach is, in in essence, microscopic and descriptive.

Theories of Systems Properties- One of the striking outcomes of the application of systems notions to a wide variety of phenomena has been the consistent observation of a number of properties, or characteristic states and processes, in the various systems being studied.[25] Such recurrence of the same properties (states or processes) has undoubtedly given rise to theories of open system properties. These theories deal with meta-descriptions of systems and contend that all open systems exhibit identical properties which include the following:[26]

1. Open systems exchange energy and information with their environment. (That is, they have inputs and outputs.)
2. Open systems tend to maintain themselves in steady states. (A steady state is a level of system integration characterized by a dynamic ratio of system components and properties.)
3. Open systems are self-regulating.

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[25] Ludwig von Bertalanffy, "General Systems Theory - A Critical Review," in General Systems. Yearbook of the Society for General Systems Research, Vol. VII, 1962, pp. 1-19; and James G. Miller, "Living Systems: Structure and Process," op. cit.

[26] Essentially from Hearn, op. cit.; and Griffiths, op. cit.

4. Open systems exhibit equifinality which means they achieve identical results from different initial conditions.
5. Open systems maintain their steady states through the dynamic interaction of functional subsystems.
6. Open systems maintain their steady states, in part, through feedback processes.
7. Open systems display progressive segregation or the process of division into a hierarchical ordering of subsystems.
8. Open systems display progressive mechanization or the ordering of certain procedures or processes as fixed arrangements.
9. Open systems tend toward equilibrium, a state of inertia, but by their nature (their ability to capitalize on their environment) can tend toward negentropy, the state of order, differentiation, and/or complexity.

Systems can be analyzed in terms of these properties. Each of the properties can be assessed in a number of ways relative to a particular type of system. For example, in organizational systems, inputs can be normative, unique, or crisis in nature and they can be directed toward action, organization, or policy. Similar characterization schemes can be devised for the other properties. The properties theory approach to characterizing systems goes beyond mere description and permits dimensionalization of a system in terms of a meta-conceptualization of certain fundamental properties (states and processes) and relationships existing in all open systems. The advantages of this approach for taxonomic research are those of the macroscopic view of a system in terms of universal systems properties and the assessment of a system relative to a particular reference point in time-space, both of which contribute to classifications of an evolutional nature.

Systems Theories Of Output Analysis- A number of systems theories deriving largely from the operations research movement focus primarily on the outcomes or products of system action. Such theories are primarily concerned with the overriding end results of system activity.[27] Although the nature of the dimensions available to characterize "output" relative to organizational systems makes any such approach to categorization subjective, the approach still has merit for taxonomic research in that it allows for a qualitative assessment of certain system attributes and an intensive look at system achievement.[28]

According to these theories, system output consists of the following:

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[27] Optner, op. cit., pp. 28-29.

[28] System achievement, output, or effectiveness in terms of multiple system functions as advanced by Schein, op. cit., pp. 96-98.

1. Productivity - the attainment of organizational goals or the fulfillment of organizational purpose.[29]
2. Organizational Health - the ability of an organization to maintain itself and its productivity in terms of dynamic interaction of the organization and its environment.[30]
3. Integration Potential - the ability of the organization to mesh the needs of individuals and/or groups within the organization to organizational goals.[31]
4. Feedback - organizational evaluation or the inspection and/or modification of inputs relative to the response of the organization or its environment to system activity.[32]

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[29] Talcott Parsons, "Suggestions for a Sociological Approach to the Theory of Organizations," Administrative Science Quarterly, Vol. I (June, 1956), pp. 64-67.

[30] W. G. Bennis, "Toward a 'Truly' Scientific Management: the Concept of Organizational Health," in General Systems. Yearbook of the Society for General Systems Research, Vol. VII, 1962, pp. 269-82.

[31] Schein, op. cit., pp. 97-98.

[32] Essentially the concept of feedback as advanced by Ralph M. Stogdill in Individual Behavior and Group Achievement. New York: Oxford University Press, 1959.

Productivity can be viewed in terms of product or services utility; organizational health can be assessed in terms of procedural adaptability, identity sense, and capacity to test reality; integration potential can be revealed through the extent of group decision-making, individual self-actualization, and individual change-flexibility manifest in organizational activity; and, feedback can be viewed in terms of desirability of, or penetration of, organizational evaluation. Together such outcome dimensions provide a framework for the output analysis of system activity. They can be subjectively rated as to the extent of their presence indicating both the openness of a system and the system's ability to maintain a dynamic existence (steady state).[33] By scaling such subjective ratings (from low to high degree) outcome profiles can be obtained. For taxonomic research this kind of characterization permits convenient comparisons of classified objects in order to assess similarities and dissimilarities in terms of specific variables or general scale profiles.

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[33] The greater the extent or degree of presence of any or all of these dimensions in system "output" the more "open" is the system and the more "dynamic" (as opposed to static or entropic) is the system's life-state.

The. Derived Classification Schemes for Taxonomic Research

The classification or characterization of specimens (herein behavior units within the educational organizational context) for taxonomic purposes is necessarily in terms of both similarities and dissimilarities.[34] Members of a taxonomic class or order are both similar to each other and dissimilar to members of other classes or orders. The taxonomist's criteria for sorting specimens into ordered groupings are, in essence, (1) minuteness of resemblance and (2) multiplicity of similarities.[35] Conversely, lack of resemblance and dissimilarity may also be applied in sorting the subjects of taxonomy. Any classification approach or scheme in taxonomic research needs to account for these matters.

Since no one all-inclusive systems theory exists and since available systems theories have specific foci and limited ranges of utility, a multi-scheme approach using the four above cited theoretical emphases was devised for this research. This approach has its advantages in providing a multi-perspective view of the phenomena under study and in maximizing the possibility of applying the ordering or sorting criteria of minuteness of resemblance and multiplicity of similarities. The greater the number of characteristics used in sorting specimens, the greater is the assurance that crucial and significant characteristics will be accounted for. Classification indices (or significant characteristics) can be more accurately revealed by such an approach and not assumed as may be the case when using a relatively small or highly selective number of characteristics.

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[34] See George Gaylord Simpson. Principles of Animal Taxonomy. New York: Columbia University Press, 1961, pp. 23 ff.

[35] *Ibid.*, p. 88

The four derived systems classification schemes used in this taxonomic inquiry into organizational behavior in education, including their theoretical referents, kinds of categories, and intended functions for this research, can be explicated as follows:

1. CLASSIFICATION APPROACH I: Comprehensive Systems Characterization Scheme.

   Derivation: from "systems theories of the whole" or comprehensive systems theories.

   Classification Categories: actors, inputs, organizational mechanism(s), organizational subsystem(s), outputs, and locus of forces.

   Method of Characterizing Specimens: verbal description relative to the above categories of each unit of organizational behavior.

   Function: (1) to organize each behavioral unit or specimen into an orderly, workable "whole" in terms of basic systems terminology and concepts; and (2) to reduce data relative to each behavioral specimen into a form amenable to inspection or content analysis for sorting (classification) purposes.

2. CLASSIFICATION APPROACH II: Input-Output Linkage (Subsystems) Scheme

Derivation: from process or subsystem theories using standard organizational terminology and standard educational task areas and terminology to provide specific operational subcategories within the framework of the process or subsystem theories.

Classification Categories: inputs in the form of operands (information, energy, and resources) and operators (control structures, operations, and personnel); functional subsystems of the following types--administrative, supervisory, instructional, purpose determination, personnel, record keeping, client-constituent relations, business management, and negotiation; and output in the form of productivity (products or performance), affectivity, and feedback (internal and external).

Method of Characterizing Specimens: checking the presence of detailed attributes (subdivisions of the above generic classification categories) on a structured worksheet.

Function: to microscopically characterize behavioral specimens in terms of (1) inputs, subsystems, and outputs; and (2) input-output linkage through functional subsystems.

3. CLASSIFICATION APPROACH III: Analysis of System Properties--States and Processes.

Derivation: from theories of universal open system properties.

Classification Categories: input, output, input-output relationship, steady state, relationship of functional subsystems, self-regulation, feedback, negentropy, progressive segregation, progressive mechanization, and equilibrium.

Method of Characterizing Specimens: checking appropriate detailed characteristics under each category on a structured worksheet.

Function: to macroscopically characterize behavioral specimens at a given point in time-space in terms of the universal properties exhibited by all open systems.

4. CLASSIFICATION APPROACH IV: Output Analysis Scheme.

Derivation: from output theories or system outcome analysis.

Classification Categories: productivity (in terms of product and services utility), organizational health (in terms of adaptability, identity sense, and reality test capacity), integration potential (in terms of self-actualization, group decision-making, and individual change flexibility), and feedback (in terms of desirability and penetration).

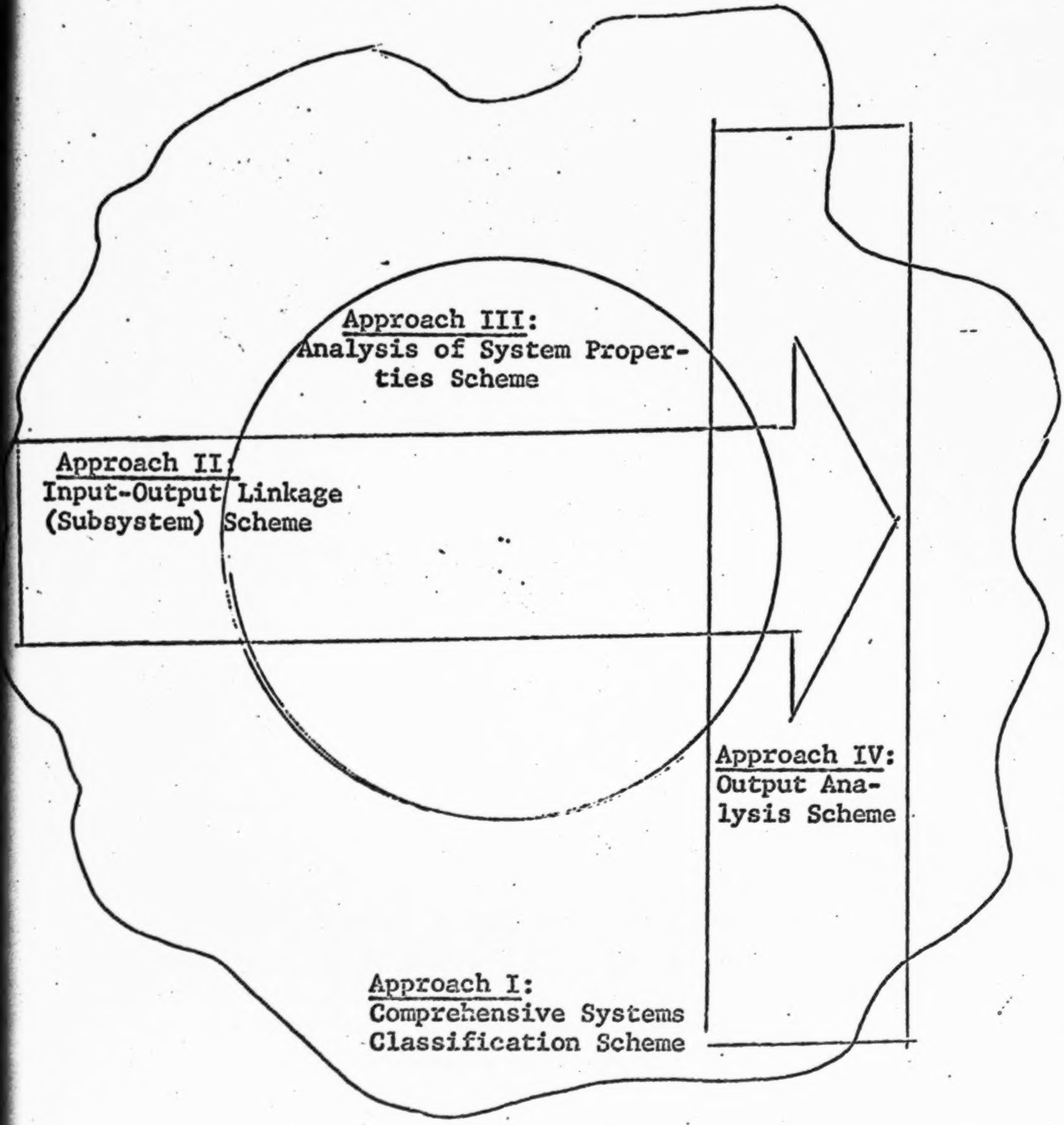
Method of Characterizing Specimens: rating of each of the classification categories on a four-point scale relative to degree of presence (from low to high) and plotting profiles for each specimen.

Function: (1) to qualitatively assess system output variables and system achievement, and (2) to indicate the degree of "openness" evinced in system action.

The rationale for this four scheme approach can be clarified further by illustrating pictorially the relationship of the classification schemes. Figure 6 below attempts to do this.

Figure 6

Relationship of the four classification schemes derived from systems theory


Approach III:
Analysis of System Properties Scheme
Approach II:
Input-Output Linkage (Subsystem) Scheme
Approach IV:
Output Analysis Scheme
Approach I:
Comprehensive Systems Classification Scheme

Thus, Approach I provides a comprehensive look at the specimens, Approach II characterizes in detail the input-output linkage and transformation process, Approach III focuses upon the universal characteristics or properties of all open systems, and Approach IV represents a qualitative assessment of system output or the end product variables of system action. Together the approaches provide a comprehensive, [illegible]ailed, and multi-perspective characterization of the subjects of this taxonomic inquiry.

The specific tools used in characterizing specimens or behavioral units in this research follow in the form they were used. Operational definitions of the terms used on the worksheets appear in Chapter Addendum I. The definitions are listed according to the worksheet to which they apply. It should be noted that the major or essential definitions (those relating to fundamental systems concepts and higher level categories in the classification schemes) represent collations of definitions from the literature, the essence of current systems thought, and/or weight of usage in systems literature. Minor or detailed definitions are largely derived from common usage. Those terms not defined (those with most obvious meanings) should be viewed relative to prevailing use.

Classification Worksheet--I

Comprehensive Systems Characterization Scheme

Specimen__________Topic______________________________

Actor(s): ______________________________

____

Input(s): ______________________________

____

Organizational Mechanism(s): ______________________________

____

____

Organizational Sub-system(s): ______________________________

____

____

Output(s): ______________________________

____

Locus ~~of~~ or Loci of Forces:

	Major	Minor	Equal
System			
Subsystem			
Environment			

Classsification Worksheet II
Input-Output Linkage (Subsystems) Scheme

Specimen________

1.0 INPUTS
__1.1 Operands
(1)__1.11 Information
(2)__1.111 Message
(3)__1.112 Inquiry
(4)__1.113 Expectations
(5)__1.114 Strategy
(6)__1.12 Energy (behavior)
(7)__1.121 Rational Behavior
(8)__1.1211 Performance
(9)__1.12111 Individual
(10)__1.12112 Individuals
(11)__1.11113 Group(s)
(12)__1.1212 Interaction
(13)__1.12121 Individuals
(14)__1.12122 Groups
(15)__1.122 Irrational Behavior
(16)__1.1221 Performance
(17)__1.12211 Individual
(18)__1.12212 Individuals
(19)__1.12213 Group(s)
(20)__1.1222 Interaction
(21)__1.12221 Individuals
(22)__1.12222 Groups
(23)__1.13 Resources
(24)__1.131 Material
(25)__1.132 Human
__1.2 Operators
(26)__1.21 Control Structures
(27)__1.211 Formal
(28)__1.2111 Legitimized
(29)__1.2112 Institutionalized
(30)__1.212 Informal(operative role)

(31)__1.22 Operations (processes)
(32)__1.221 Decoding
(33)__1.222 Advisory
(34)__1.223 Decision-making
(35)__1.224 Communication
(36)__1.225 Memory
(37)__1.2251 Formal (conscious)
(38)__1.2252 Informal (unconscious)
(39)__1.226 Work
(40)__1.2261 Routine
(41)__1.2262 Special
(42)__1.227 Rectification (check)
(43)__1.228 Encoding
(45)__1.23 Personnel
(46)__1.231 Individual
(47)__1.232 Individuals
(48)__1.233 Small Group
(49)__1.234 Large Group

2.0 FUNCTIONAL SUB-SYSTEMS
(50)__2.1 Administrative
(51)__2.11 Decision Making
(52)__2.12 Communication
(53)__2.13 Policy
(54)__2.131 Formulation
(55)__2.132 Interpretation
(56)__2.133 Enforcing
(57)__2.134 Revision
(58)__2.14 Rules and Regulations
(59)__2.141 Formulation
(60)__2.142 Interpretation
(61)__2.143 Enforcing
(62)__2.144 Revision
(63)__2.15 Arbitration (of conflict)
(64)__2.151 Intra-organizational
(65)__2.152 Interstitial
(66)__2.153 Extra-organizational
(67)__2.154 Between Spheres
(68)__2.16 Research
(69)__2.161 Operations
(70)__2.162 Program
(71)__2.163 Personnel
(72)__2.164 Clients
(73)__2.17 Work
(74)__2.171 Routine
(75)__2.172 Special
(76)__2.2 Supervisory
(77)__2.21 Control
(78)__2.22 Development
(79)__2.221 Orientation
(80)__2.222 Improvement
(81)__2.223 Re-training
(82)__2.23 Advisory
(83)__2.3 Instructional
(84)__2.31 Teaching
(85)__2.32 Curriculum
(86)__2.321 Development
(87)__2.322 Testing
(88)__2.323 Implementation
(89)__2.324 Modification
(90)__2.325 Revision
(91)__2.33 Extra-curriculum
(92)__2.34 Materials
(93)__2.35 Facilitation
(94)__2.4 Purpose Determination
(95)__2.41 Goals (educational)
(96)__2.42 Objectives
(97)__2.421 Operation
(98)__2.422 Program
(99)__2.5 Personnel
(100)__2.51 Organizational Staff
(101)__2.511 Recruitment
(102)__2.512 Selection
(103)__2.513 Assignment

(104)___2.514 Orientation
(105)___2.515 Development
(106)___2.516 Separation
(107)___2.52 Pupil Services
(108)___2.521 Health
(109)___2.5211 Physical
(110)___2.5212 Mental
(111)___2.522 Testing
(112)___2.523 Advisory
(113)___2.5231 Guidance
(114)___2.5232 Counseling
(115)___2.5233 Placement
(116)___2.524 Food
(117)___2.525 Transportation
(118)___2.526 Control
(119)___2.6 Record Keeping
(120)___2.61 Staff
(121)___2.611 Professional
(122)___2.612 Non-professional
(123)___2.62 Student
(124)___2.621 Health
(125)___2.622 Academic
(126)___2.63 Fiscal
(127)___2.64 Facilities
(128)___2.7 Client-Constituent Relations
(129)___2.71 Information
(130)___2.711 Dissemination.
(131)___2.712 Clarification
(132)___2.72 Participation
(133)___2.721 Maintenance
(134)___2.722 Assistance
(135)___2.723 Developmental
(136)___2.8 Business Management
(137)___2.81 Financial Affairs
(138)___2.811 Budgeting (allocation of funds)
(139)___2.812 Purchasing
(140)___2.813 Remuneration
(141)___2.82 Physical Plant
(142)___2.821 Planning
(143)___2.822 Maintenance
(144)___2.823 Modification
(145)___2.824 Improvement
(146)___2.825 Addition
(147)___2.9 Negotiation
(148)___2.91 Employees
(149)___2.911 Professional Staff
(150)___2.912 Non-professional
(151)___2.92 Other Governmental Agencies
(152)___2.93 Community
(153)___2.931 At large
(154)___2.932 Groups

3.0 OUTPUT
___3.1 Productivity
(155)___3.11 Product
(156)___3.111 Information
(157)___3.1111 Written
(158)___3.1112 Oral
(159)___3.112 Decisions
(160)___3.113 Policy
(161)___3.1131 Formulation
(162)___3.1132 Revision
(163)___3.114 Rules and Regulations
(164)___3.1141 Formulation
(165)___3.1142 Revision
(166)___3.115 Resources
(167)___3.1151 Personnel
(168)___3.1152 Course of Study
(169)___3.1153 Facilities
(170)___3.1154 Fiscal
(171)___3.116 Planning
(172)___3.1161 Strategy
(173)___3.1162 Operational Plans
(174)___3.117 Records
(175)___3.118 Research
(176)___3.119 Contract
(177)___3.12 Performance
(178)___3.121 Behavior
(179)___3.1211 Rational
(180)___3.1212 Irrational
(181)___3.122 Decision Transmit
(182)___3.123 Information Transmission
(183)___3.124 Policy
(184)___3.1241 Enforcement
(185)___3.1242 Interpretation
(186)___3.125 Rules and Regulations
(187)___3.1251 Enforcement
(188)___3.1252 Interpretation
(189)___3.126 Arbitration
(190)___3.127 Consultation
(191)___3.128 Work
___3.2 Affectivity
(192)___3.21 Organization
(193)___3.211 Professional Staff
(194)___3.212 Non-professional
(195)___3.22 Clients
(196)___3.221 Students
(197)___3.222 Parents
(198)___3.23 Interstitial Groups
(199)___3.231 Board of Education
(200)___3.232 PTA
(201)___3.233 Citizen Advisory Groups
(202)___3.234 Other

(203)__3.24 Supra-Educational Organizations
(204)__3.241 Intermediate (County)
(205)__3.242 State
(206)__3.243 Federal
(207)__3.25 Extra-Organizational
(208)__3.251 Parents
(209)__3.252 Citizens
(210)__3.253 Community
(211)__3.26 Profession
(212)__3.261 Individual(s)
(213)__3.262 Associations
(214)__3.263 Movements
__3.3 Feedback
(215)__3.31 Internal
(216)__3.311 Positive
(217)__3.3111 Ongoing
(218)__3.3112 Post facto
(219)__3.312 Negative
(220)__3.3121 Ongoing
(221)__3.3122 Post facto
(222)__3.32 External
(223)__3.321 Positive
(224)__3.3211 Ongoing
(225)__3.3212 Post facto
(226)__3.322 Negative
(227)__3.3221 Ongoing
(228)__3.3222 Post facto

Classification Worksheet III
Analysis of System Properties--States and Processes

Specimen________

1. Input:
(300)__Routine (Ordinary)
(301)__Special
(302)__Crises

(303)__Action
(304)__Organization
(305)__Policy

2. Output:
(306)__Routine (Ordinary)
(307)__Special
(308)__Crisis

(309)__Functional
(310)__Dysfunctional
(311)__Non-functional

3. Input-Output Relationship:
(312)__Direct
(313)__Indirect
(314)__None

(315)__Unchanged
(316)__Adapted
(317)__Changed

(318)__Energy Increase
(319)__Energy Equivalence
(320)__Energy Loss

4. Steady State (System Life State):
(321)__Maintained Unchanged
(322)__Progressive Modification
(323)__Regressive Modification

(324)__Stable
(325)__Permeable

(326)__Responsive
(327)__Adaptive
(328)__Inflexible

5. Relationship of Functional Subsystems:
(329)__Close
(330)__Workable
(331)__Impeded
(332)__None

(333)__Formal
(334)__Informal

(335)__Programmed
(336)__Spontaneous

6. System Self-regulation:
(337)__Complete
(338)__Partial
(339)__Minimal
(340)__None

(341)__Fixed
(342)__Ad hoc
(343)__Accidental

(334)__Reflexive
(345)__Cognitive Immediate
(346)__Cognitive Delayed

7. Feedback (Information Flow):
(347)__Unlimited
(348)__Limited
(349)__None

(350)__Formal
(351)__Informal

(352)__Intermittent
(353)__Continuous
(354)__Proportional
(355)__Relay

(Tendencies toward:)

	Degree of Existence				State of Tendency		
	High	Mod.	Low	None	Incr.	Remain Same	Decr.
8. Negentropy	(356)	(360)	(364)	(368)	(372)	(376)	(380)
9. Progressive Segregation	(357)	(361)	(365)	(369)	(373)	(377)	(381)
10. Progressive Mechanization	(358)	(362)	(366)	(370)	(374)	(378)	(382)
11. Equilibrium	(359)	(363)	(367)	(371)	(375)	(379)	(383)

Classification Worksheet IV
Output Analysis Scheme

SUBJECTIVE OUTPUT RATING SCALE

Specimen________________

		0	1	2	3
I. Productivity	product utility				
	services utility	•	•	•	•
II. Organizational Health	adaptability	•	•	•	•
	identity	•	•	•	•
	reality test capability	•	•	•	•
III. Integration	self-actualization	•	•	•	•
	group decision-making	•	•	•	•
	individual change flexibility	•	•	•	•
IV. Feedback	desirability of	•	•	•	•
	penetration of	•	•	•	•

Applying the Classification Schemes to Behavior Specimens

The four systems schemes devised for characterizing organizational behavior in education were used to classify the 90 behavioral units (O.T.U.'s or "specimens") that are the subjects of this taxonomic research. These behavioral units as noted elsewhere were obtained from two particular forms of educational organization--the public school district and a private institution of higher education. In classifying the behavioral units using the systems approaches it was necessary to look beyond the units or O.T.U.'s in order to permit detailed classification. In addition to the unit or O.T.U. being considered, information from other O.T.U.'s and special background data provided by the field study were used. Even with such other data it was not always possible to operate at the greatest level of specificity and, at times, use of more generic characterization categories was required.

Each "collected and mounted" behavioral unit or specimen from the source organizations was classified according to the various schemes by two researchers working independently. Comparison of the independent classifications for the schemes in approaches I, II, and III revealed that a high degree of inter-rater reliability was achieved. Very seldom (in less than one per cent of the possible instances) was it necessary to resolve a classification discrepancy by the use of definitions or joint-rater reassessment; rather, errors of omission (e.g., failing to check or overlooking a relevant characteristic) were typical of the relatively few classification differences (approximately three per cent). Inter-rater reliability relative to approach IV (the subjective output rating scheme) was not as great as for the other approaches. The lack of specific operational criteria for "degree of presence" resulted in one rater tending to use higher scale values for rating output variables than the other rater. However, the configuration of the profiles realized was similar and the overall classifications comparable. This generally high level of inter-rater reliability contributes to the objectivity of the classification process and was due in part to the detailed operational definitions that guided the classification process.[36]

Since it is beyond the scope of this document to present the detailed classifications of all of the behavioral units, the characterization of two such units in terms of the four classification schemes will be described. For illustrative purposes one unit each was chosen from the public school and higher education contexts. The units selected illustrate quite well the application of the general classification procedures and are rather central specimens to the presentation in the data analysis section of this chapter. (The units are #4, and #75 as found in Chapter III.)

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[36] Obviously related to inter-rater reliability was the familiarity of the raters with the concepts and definitions used. Such resulted from the review of systems literature, development of the classification schemes, and the process of formulating operational definitions for the study. It is apparent that the level of inter-rater reliability achieved can be attributed to understanding of the concepts and terminology employed. Some "training for use" would be required for other researchers in order for them to apply the classification schemes with a like degree of inter-rater reliability.

Classification of "A Prospective Teacher Interview," Behavioral Unit #4--

The verbal characterization of this behavioral unit on Worksheet I (the Comprehensive Systems Characterization Scheme) in terms of general systems terminology and a general or inclusive view of the specimen was as follows:

Actor(s): Superintendent; High School Principal; Teacher candidate; and Superintendent of a near-by district.

Input(s); Actors; Actors perceptions and expectations; and Work, Decision, and Communication processes.

Organizational Mechanism(s): Interview; and Personal background check on candidate via telephone.

Organizational Subsystem(s): Administrative; and Personnel (recruitment and selection).

Outputs: Decision to hire candidate; Offer of contract (salary conditional on recommendation); and Agreement that acceptance or rejection of contract is to come after candidate interviews for another position.

Loci of Forces: Major, from an organizational subsystem; and Minor, from the environment.

Classification of this behavioral unit on Worksheet II (Input-Output Linkage Scheme) in terms of the specific characteristics in this scheme was as follows:

Input: Operand Inputs in the form of (a) Information-Expectation (Characteristics #4) on the part of the Superintendent, Principal, and Candidate, (b) Energy-Rational Behavior-Individuals (Characteristic #13)--the interaction of the Superintendent, Principal, and Candidate in the interview situation, and (c) Resources-Human (Characteristic #25)--the teacher candidate; and Operator Inputs in the form of (a) Control Structures--Formal (Characteristic #27)--behavior is obviously controlled by the formal school organization but greater specificity (in terms of legitimized or institutionalized control) is not evidenced in the specimen itself or the background data on the school system, (b) Operations (Processes)-Decision-making, Communication, and Routine Work (Characteristics #34, #35, and #40)--a decision is to be made, relevant information transmitted, and the kind of work done usual or normative to the system, and (c) Personnel-Individuals (Characteristic #47)--the involvement of the Superintendent and Principal with no evidence that these organizational members function as a formal or established group in any sense of the word.

Functional Subsystems: The Administrative Subsystem in terms of Decision-making and Communication (Characteristics #51 and #52)--administrative decision-making (choice between alternatives: to hire and to offer contract) and information processing occurs in the specimen; Personnel-Organizational Staff subsystem in terms of Recruitment and Selection (Characteristics #101 and #102)--the behavioral unit involves the attraction, and the evaluation and selection of personnel; and the Business Management-Financial Affairs subsystem in terms of Remuneration (Characteristic #140)--the salary for the position is considered and determined in the specimen.

Output: Productivity-Product-Information in an Oral form (Characteristic #158)--one resultant of the behavioral interaction is information, and -Planning in the form of Operational Plans (Characteristic #173)--it is agreed t[illegible] the candidate will decide after interviewing for another position and that the salary is contingent upon a recommendation to be processed; Productivity-Performance in terms of Rational Behavior (Characteristic #179)--the behavior of the Superintendent is purposive (directed toward obtaining an organizational member), and in terms of Information Transmission (Characteristic #182)--information is transmitted between the members in the interaction situation; Affectivity-Organization (Characteristic #192)--the organization will, in fact, be affected by the candidate's acceptance or rejection of the job offer (greater specificity not possible due to available evidence in specimen) and-Profession-Individual (Characteristic #212)--the candidate is affected by the interaction and at the time is simply a member of the teaching profession; and Feedback-Internal-Positive-Post facto (Characteristic #218)--reinforcing evaluative information is evinced (e.g., candidate's reply, "Eager") and-Negative-Post facto (Characteristic

Insert space

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#221)--evaluative information against the direction of system activity is also present (e.g., the near-by Superintendent initially did not remember the candidate). In all instances the feedback in the process sense is "after the fact."

The classification of this behavioral unit on Worksheet III. (Analysis of System Properties - States and Processes) was as follows:

Input: Routine (Characteristic #300)--the input state (action state on obtaining personnel) is ordinary or normative to the system; and Organization (Characteristic #304)--the input state is functional in terms of organizational maintenance (the provision of organization members).

Output: Routine (Characteristic #306)--the output state (that of selecting an organizational member) is ordinary or normative to the system; and Functional (Characteristic #309)--this state contributes to the positive fulfillment of system purposes (the selection of members and perpetuation of the organization).

Input-Output Relationship: Direct (Characteristic #312)--the initial and terminal states ($time_1$ and $time_2$ or t_1 and t_2) are essentially immediate, effective, and consequential; Unchanged (Characteristic #315)--no change or modification is made in the content or goals of system activity from t_1 to t_2; and Energy Equivalence (Characteristic #319)--output resultants approximate and neither surpass or fall short of intended system activity goals.

Steady State: Maintained Unchanged (Characteristic #321)--the system steady state is unaltered (neither changed to a more or less functional state); Stable (Characteristic #324)--the system state gives evidence of being able to withstand the impinging forces (feedback re candidate and candidate's desire to interview for another position); and Adaptive (Characteristic #327)--the system consciously encompasses impinging forces (above).

Relationship of Functional Subsystems: Close (Characteristic #329)--the Superintendent's relationships to the Principal and the reference giver are maximizing; Formal (Characteristic #333)--these relationships are controlled by the legitimized organizational structure; and Programmed (Characteristic #335)--the relationships are fixed by the organizational structure.

System Self-Regulation: Complete (Characteristic #337)--the controlling of system action is total (full adjustment to impingements on the system); Ad hoc (Characteristic #342)--al regulation (e.g., of obtaining reference or establishing operational plans for acceptance-rejection of job offer) results from specially devised or situational means; and Cognitive Immediate (Characteristic #345)--regulation is rational (thought out and especially devised) and achieved without delay.

Feedback: Limited (Characteristic #348)--the reference is not initially achieved and the candidate does not accept the job offer at t_2; Formal (Characteristic #350)--feedback flows through prescribed organizational channels; and Continuous (Characteristic #353)--evaluative information occurs throughout the unit.

Negentropy: Exists to a Moderate Degree (Characteristic #300)--due to the order within the unit of activity but not High Degree since complete order (job acceptance) is not achieved; and Increasing State (Characteristic #376)--decision to hire candidate, to seek reference, and to set operational plans for the candidate's decision give evidence of increasing order and complexity.

Progressive Segregation: Moderate (Characteristic #361)--since there is some heirarchical ordering of subsystems (information gathering and operational planning) in this unit; and Remains the Same (Characteristic #378)--since there is no increase or decrease in the state of tendency noted.

Progressive Mechanization: Exists in a Low Degree (Characteristic #366)--only operational plans for a decision are fixed as arrangements between t_1 and t_2; and Remains the Same (Characteristic #378)--no increase or decrease in the state of the tendency is noted.

Equilibrium: Exists in a Low Degree (Characteristic #367)--there is some inertia (indecision re acceptance) still evidenced (in spite of "eagerness") at t_2; and Decreasing State (Characteristic #373)--inertia decreases somewhat from t_1 to t_2 due to the seeking of reference information and the determination of operational plans for the candidate's decision.

The classification of this behavioral unit on Worksheet IV (Output Analysis Scheme) in terms of scale ratings of 0 = none, 1 = low, 2 = moderate, and 3 = high (degree of) was as follows:

Product utility: Moderate (2)--the acceptance decision is not yet reached and full usefulness is not yet realized.

Services utility: High (3)--assistance potential for decision activity is maximally achieved.

Adaptability: High (3)--the organization is flexible to both the candidate's desire to look at another position and to forthcoming reference data.

Identity: Moderate (2)--the organization evinces what its goals are and what it is to do but to neither a high or low degree.

Reality Test Capacity: Moderate (2)--the organization searches out and capitalizes on relevant environmental properties (the candidate and reference giver).

Self-Actualization: High (3)--candidate can maximize individual goals by choosing between two positions.

Group Decision-Making: Moderate (2)--the Principal is involved to some degree in the decision-making process.

Individual Change Flexibility: Low (1)--only a slight modification in terms of operational plans is achieved to accomodate candidate.

Desirability of Feedback: High (3)--evaluative information is actively sought by both parties.

Penetration of Feedback: Moderate (2)--complete evaluative information (the desired decision on the part of the candidate) has not yet (at t2) entered the system although other evaluative information has been received.

Classification of "Student Course Change", Behavioral Unit #75 - Due to the extensive description needed to illustrate how the four-scheme systems classification approach is applied to behavioral units, this second unit will be illustrated in terms of only the classification categories employed. However, in instances where different characteristics than used in classifying the foregoing specimen have been observed, these will be described in detail for the reader's information.

Verbal characterization of this unit on Worksheet I (the Comprehensive Systems Characterization Scheme) was as follows:

Actor(s): Dean; Student; Professor; and Clerk.

Inputs: Actors; and Student's request for course change.

Organizational Mechanism(s): Informal conference.

Organizational Subsystem(s): Administrative; and Pupil Placement.

Output(s): Course change effected; Student advised of procedure; and Plan for informing instructor of new course of student formulated.

Locus of Forces: Major, from organizational subsystems.

Classification of this behavioral unit on Worksheet II (Input-Output Linkage Scheme) was as follows:

Input: Operand Inputs in the form of (a) Information-Inquiry (Characteristic #3)--a formal request was made by the student, (b) Information-Expectations (Characteristic #4), and (c) Energy-Rational Behavior-Interaction-Individuals (Characteristic #13); and Operator Inputs in the form of (a) Control Structures-Formal-Legitimized (Characteristic #28)--prescribed organizational controls and authority (via Dean and course change procedure) were used, (b) Operations-Advisory,-Decision-Making, and -Routine Work (Characteristics #33, #34, and #40)--the former since the student is receiving consultative advice and suggestions, and (c) Personnel-Individuals (Characteristic #47).

Functional Subsystems: The Administrative Subsystem in terms of Decision-Making (Characteristic #51) and Routine Work (Characteristic #74)--an ordinary organizational task (the processing of a course transfer) is performed; and Personnel-Pupil Services-Placement (Characteristic #115)--the student is placed in an appropriate learning situation (a class to meet training goals).

Output: Productivity-Product-Decision (Characteristic #159)--a terminal choice from alternative is made; Productivity-Performance-Decision Transmission (Characteristic #181)--the decision is transmitted (or plans for transmission made) to all concerned in the specimen; Affectivity-Clients-Student (Characteristic #196)--the decision (output) directly affects the student; and Feedback-Internal-Positive-Ongoing (Characteristic #217)--evaluative information is from within the unit, is reinforcing, and is continuous throughout the unit.

The classification of this behavioral unit on Worksheet III (Analysis of System Properties - States and Processes) was as follows:

Input: Routine (Characteristic #300); and Action (Characteristic #303) since system work was to be done.

Output: Routine (Characteristic #306); and Functional (Characteristic #309).

Input-Output Relationship: Direct (Characteristic #312); Unchanged (Characteristic #315); and Energy Equivalence (Characteristic #319).

Steady State: Maintained Unchanged (Characteristic #321); Stable (Characteristic #324); and Responsive (Characteristic #326) --the system was quite aware of the impinging forces of (a) certification needs and (b) the instructor's ability to cope with "transferring in" students, and initiated action accordingly.

Relationship of Functional Subsystems: Workable (Characteristic #330)--it was operationally facilitating but not maximizing; Formal (Characteristic #333); and Programmed (Characteristic #335).

System Self-Regulation: Complete (Characteristic #337); Fixed (Characteristic #341)--all regulation results from consciously prescribed and devised means (follows appropriate channels);

and Cognitive Immediate (Characteristic #345).

Feedback: Unlimited (Characteristic #347)--evaluative information is not impeded; Formal (Characteristic #350); and Continuous (Characteristic #353).

Negentropy: Exists to a High Degree (Characteristic #350)--a maximal level of order (complete goal realization is reached); and Increasing State (Characteristic #372).

Progressive Segregation: None (Characteristic #369)--no hierarchical ordering of subsystems occurs here.

Progressive Mechanization: None (Characteristic #370)--no ordering of processes as fixed arrangement occurs in this specimen.

Equilibrium: Low Degree of Existence (Characteristic #367); and Decreasing State of Tendency (Characteristic #383).

Classification of this behavioral unit on Worksheet IV (Output Analysis Scheme) in terms of scale ratings of 0 = none, 1 = low, 2 = moderate, and 3 = high (degree of) was as follows:

Product utility: High (3)--ultimate usefulness (the course change) was realized.

Services utility: High (3).

Adaptability: Moderate (2)--the organization is flexible to the student's desire to change courses but to neither a high or low degree.

Identity: Moderate (2).

Reality Test Capacity: None (0)--organization-environment relationships are not involved in this unit and not relevant to it.

Self-Actualization: Moderate (2)--student goals (but only short-term, immediate goals) can be realized.

Group Decision-Making: Moderate (2).

Individual Change Flexibility: None (0)--innovation or adaptation is not involved in this unit.

Desirability of Feedback: High (3).

Penetration of Feedback: High (3)--the evaluative information tends to be used throughout the unit by all of those involved.

Other applications - The four systems classification schemes formulated and applied in this taxonomic research proved to be readily usable classification devices. Although some behavioral units or specimens were more difficult to handle than others (due to the kinds and extent of available data), in general, the behavioral units under scrutiny could well be characterized according to the schemes. Realizing though that other types of behavioral units might equally well be the subjects of taxonomic inquiry into organizational behavior, the four scheme systems approach was tested with other kinds of specimens. A number of larger, more complex units of organizational behavior involving more data, greater detail, and longer time spans were classified. Several cases in educational administration (long and short, written and filmed) were the subjects of this additional test of the schemes.[37] It was found that the systems schemes (especially schemes III and IV) could be even more easily applied to the more comprehensive behavioral entities. The systems schemes appear to have potential for use with behavioral units other than those focused on in this research and the macroscopic schemes seem to be particularly useful in classifying behavioral units that take place over extended time periods, a potential for developmental or evolutional taxonomy.[38]

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[37] The schemes were applied (1) to several written cases from The University Council for Educational Administration's Written Case Series (Columbus, Ohio); (2) to a number of educational cases developed by graduate students at the University of Rochester; (3) to the filmed case, "The Conference" (Ohio State University, Motion Picture Division, Columbus, Ohio); and (4) to the extended case study, "The Jackson County Story," by Keith Goldhammer and Frank Farmer of the CASEA of the University of Oregon, Eugene, Oregon.

[38] Evolutional taxonomy is concerned with the growth patterns of its subjects and the development of classes in time space. It is essentially a dynamic classification framework concerned with speciation and developmental forms, according to Simpson, op. cit., p. 67, the basis of, or focal approach of, modern taxonomy.

Data Analysis

Analysis of data consists of comparison of the ninety behavioral units that are the subjects of this taxonomic research in terms of the characterizations of these units according to the systems classification approaches or schemes. Before looking at some of the results of analysis and conclusions that can be drawn, it is important to discuss briefly the ways the classifications of the behavioral units according to the various schemes were analyzed. Following this examination of analysis procedure, the results of analysis and relevant conclusions can be more meaningfully treated. The results of analysis (the sorting or grouping of behavior units and discussion of the groupings) can then be placed in appropriate taxonomic perspective in order to facilitate generalization and, later, the discussion of the implications of this aspect of the larger study.

Procedure

Classification approach one (the Comprehensive Systems Characterization Scheme) was designed to organize each behavioral unit or specimen into a workable "whole" in systems terms and to reduce data relative to each behavioral unit into a form amenable to inspection and/or content analysis for sorting purposes. This approach served well its first purpose and was functional to the overall classification process in terms of organizing the behavioral units into more manageable entities. Inspection analysis, however, failed to sort the behavioral units into meaningful taxonomic groupings. Due to the extent of verbal, descriptive data in the scheme one classifications, groupings tended to be characterized more in terms of standard organizational terminology than systems concepts. Analysis of this scheme was not pursued further since little promise of more productive results through content analysis (due to the limitations of the verbal data) could be anticipated.

Classifications of the behavioral units according to approaches two (Input-Output Linkage Scheme) and three (Analysis of System Properties--States and Processes) were subjected to computer analysis to determine (1) those characteristics in the schemes used in classifying the behavioral units that are the subjects of this taxonomic inquiry, (2) overlap in the use of these characteristics, and (3) overlap in characteristics between the behavioral units in the study sample. Cards were punched recording presence or absence of each of the characteristics on the worksheets for schemes two and three for each behavioral unit. These were then processed and form the basis for the sorting of behavioral units into taxonomic groupings. Three kinds ~~of~~ information resulted from the computer analysis and the use of each relative to this analysis section can be briefly explicated. First, the computer analysis revealed the extent to which each characteristic was used in classifying the behavioral units or specimens and which characteristics were not used. This can be utilized to describe the domain represented by the specimens in systems terms and to point to potentially discriminating characteristics or sets of characteristics. Second, the use overlap for each of the characteristics with each other characteristic in these two schemes was indicated. This can be used to reveal those characteristics that tend to be linked or found together in the behavioral unit sample or which are synonomous or tend to characterize or measure the same thing. Third, the number of characteristics shared in common in terms of presence or absence (overlap) between each behavioral unit with each other behavioral unit was obtained. In addition to positive overlap, negative overlap (those characteristics commonly absent from each pair of compared units) and total overlap (positive plus negative) were also revealed. This analysis can be employed to compare behavioral units or specimens in terms of similarities and dissimilarities and as a basis for placing behavioral units into taxonomic groupings.

Classification approach four (Output Analysis Scheme) was devised and developed later in the course of this research and was analyzed only by inspection. Since characterizations of behavioral units by this scheme are in terms of profiles, they lend themselves well to manual inspection analysis procedures. In this research these characterizations functioned best to corroborate the results of the analysis of classification approaches two and three and in terms of checking on the "openness" (essentially an output state) of the units and the taxonomic groupings evinced.

The Results of Classification

General Characteristics of the Domain--A number of generalizations about the organizations studied can be made as a result of analysis revealing frequency of use for each characteristic in classification schemes two and three. These generalizations are descriptive of the domain represented by the subjects of this taxonomic inquiry in systems terminology and relative to basic systems concepts. They can be set forth in both general and more specific terms.

In general, relative to concepts embraced by the input-output linkage scheme (classification approach II), this organizational behavior in education can be characterized as having multiple inputs in the form of operands and operators and multiple outputs in the form of products, affects, and feedback. As could be expected when focusing on members of administrative positions in an organization, inputs were channeled most often into the administrative subsystem for processing into output(s). In regard to feedback, the "openness" of the organizational systems studied is attested by the fact that in only a few of the behavioral units was feedback not evinced.

Other more specific observations can be made about the analysis of the scheme two classifications. First, information inputs were most prevalent. In terms of behavioral input, individual performance and interactive behavior occurred with equal frequency. Human resources were operated on, however, considerably more than were material resources. In terms of operator inputs the legitimized formal control structure was used predominantly and decision, communication, and routine work processes typify the behavioral units. Interestingly, individual work as opposed to group work predominated in spite of the fact that operand inputs involved performances and interactions almost equally.

As has been indicated, most input was channeled into the administrative subsystem. The decision-making and communication subsystems of this subsystem were most frequently used, followed by the routine work subsystem. The client-constituent relations subsystem and personnel subsystem were next most often utilized in processing system input.

In regard to output information, decisions and operational plans represent in almost equal amounts the majority of product outputs in these specimens. Information transmission occurred most often as performance productivity. Output affectivity was evinced most in terms of the organization itself and/or organizational personnel. Next most often affected by output were clients, the immediate environment, and individuals in the profession. Feedback tended to be positive (reinforcing) rather than negative (against the direction of activity) and predominantly internal as opposed to external.[39]

The analysis of the scheme three (systems properties--states and processes) classifications indicate that it can generally be stated that these behavioral units exhibit the qualities of "openness" and to a lesser or greater extent the full range of characteristic properties of open systems. More specifically, input and output states tended to be routine or normative (65 and 67/90 respectively) and to have a direct relationship (88/90). Although inputs were mostly action oriented (54/90), a number (32/90) were concerned with organizational structure and maintenance. Outputs were almost totally (83/90) functional. Although system steady state was maintained unchanged in over 85% of the behavioral units (78/90), a progressive modification was noted in 12% (11/90) of the specimens. Steady state thus tended to be stable (72/90) but was more likely adaptive (40/90) or responsive (32/90) than inflexible. Functional subsystems were related formally (85/90) in most of the units and at least at a workable level. Self regulation was essentially complete (69/90) and immediate (85.90). Formal feedback (79/90) of an unlimited nature (56/90) predominated and in only four behavioral units was no feedback evinced. Negentropy was present to some degree in all but one specimen and the expected inverse relationship of it and equilibrium was revealed. In only a few specimens was negentropy decreasing (3/90) and equilibrium increasing (4/90). Progressive mechanization was noted in over one-half (47/90) of the units although progressive segregation was evidenced in only 20% (18/90) of the specimens. This attests to the formalization of the organizational systems studied, and the extent of already prescribed channels and to some lesser extent procedures.

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[39] It should be noted that according to Miller ("Toward a General Theory for the Behavioral Sciences," op. cit., p. 529) negative feedback is necessary for the maintenance of an open system's steady state and, thus, is a factor enhancing system "openness." One can, therefore, question the extent to which a system which is characterized by positive feedback is, in fact, "open" or at least maximally open. The same point can as well be made relative to internal and external feedback, the latter a more significant factor in enhancing system "openness."

It is apparent from the foregoing description of the domain represented by the subjects of this taxonomic inquiry that a great deal of homogeniety exists. This in no way indicates a lack of discriminatory power on the part of the devised classification schemes.

Rather, and as most students of organization would expect, behavioral units from a two member sample would tend to be homogeneous to a noticeable extent. Before it can be determined that the classification schemes are low in discriminatory power, application needs to be made to a greater number and kinds of educational organizations. In fact, as will be seen in the next two parts of this analysis section, the systems schemes (II, III, and IV) exhibit considerable discriminatory power with the rather homogeneous domain represented by the behavioral unit sample.

A complete tabulation of the use of the characteristics on worksheets two and three appears in Chapter Addendum II. Those groups of characteristics that tend to discriminate can readily be noted along with those that have low discriminatory power. The former are the groups, sets, or pairs of specific characteristics that tend to be used relatively equally while the latter are those which load relative to one characteristic in the group or set. It should be noted, however, that all sets that load on a given characteristic may not be of low discriminatory power since they may, in combination with other characteristics, contribute to the sorting of behavioral units.

Overlapping Characteristics - A number of characteristics on classification schemes two and three were revealed by computer analysis to appear consistently together in the classifications of the behavioral units. These overlaps were examined to determine whether such pairs of characteristics tended merely to be found together or whether they were synonomous and, thus, characterized the same thing. In no instance could it be determined that any of these items were, in fact, synonomous or characterized the same thing. Apparently they simply had a tendency to occur simultaneously whether by accident or design. In no instance did such overlap occur at a level of significance that ensures that when one is present or not present the other will be likewise present or not present. It can only be concluded that the characteristics which were found or not found together occur by chance or some causal element not revealed by the analysis. It is, of course, possible that the homogeniety of the sample domain is a factor in this regard.

Those characteristics which consistently appeared together were the characteristics that tended to be used most often in classifying the behavioral units. Most of the characteristics which overlapped extensively appear in classification scheme III and can be readily identified by examining Chapter Addendum II.

Toward Taxonomic Groupings--The ultimate aim of taxonomic inquiry is the sorting or ordering of phenomena or objects into groups or classes so that they can be better understood. The placement of objects into taxonomic groupings not only facilitates the understanding of like objects but also helps in understanding the differences and relationships between more or less similar objects and categories of objects. Two criteria may be applied in assessing the viability of a classification scheme (or set of schemes) for taxonomic inquiry. First, and quite simply, does the scheme (or schemes) sort the objects being studied? Second, and of significant import, do the taxonomic groupings derived contribute to the understanding of the objects or phenomena so ordered?

It is to these ultimate purposes of taxonomic inquiry that we now turn. Although a number of the characteristics in the systems schemes two and three were not used in classifying the 90 behavioral units, and a number of others were used so extensively as to characterize the domain of objects, it will be seen that the schemes did provide a basis for sorting the behavioral units or specimens and that the resulting groupings can be described in terms of systems concepts. It should be cautioned that a taxonomy was not produced; certainly the number of specimens studied and the exploratory nature of the application of the classification schemes militate against any such a pretentious notion. None-the-less similarities between behavioral units were revealed by the classifications, and the schemes together functioned to place specimens into distinct groupings.

Once classification strategies have been developed and the subjects of taxonomic research classified, the taxonomist is confronted with two approaches for forming classes or taxonomic groupings. As discussed in detail in Chapter II the available approaches are those of (1) empirical (or numerical) taxonomy and (2) theoretical taxonomy. Obviously some meshing of these approaches does take place in taxonomic research, and, depending upon the purposes of taxonomic inquiry, one approach or the other might be more utilitarian. Certainly both approaches have their advantages or strengths as well as weaknesses, both singly and in combination.

Since this research is basically exploratory and is concerned more with testing classification strategies than producing a taxonomy, the two available approaches for formulating taxonomic groupings will be pursued relative to testing the systems classifications as means for formulating groupings that enable the phenomena under study to be better understood. It is recognized that some blending of the approaches might potentially be of greatest value. However, at this point in the development and testing of classification devices for taxonomic inquiry into organizational behavior in education it is felt that the pure polar approaches will better indicate the viability of the schemes.

Following is the application of the empirical and theoretical approaches toward the formulation of taxonomic groupings based on the systems classifications of the subjects of this research.

Taxonomic Groupings Using the Empirical (Numerical) Approach--As noted in Chapter II, the empirical or numerical approach to formulating taxonomic groupings is based upon (1) the strategy of identifying an extensive number of characteristics for use in classifying objects and (2) the derivation of groupings on the basis of similarity or number of overlapping characteristics between the objects classified. The systems schemes as developed (particularly schemes two and three) lend themselves well to such an approach. These schemes contain an extensive number of discrete characteristics which can function in terms of their presence or absence to provide a basis for establishing similarity (or degree of) between the behavioral units classified.

Similarities in the empirical approach can be established between two objects in terms of characteristics in common (positive overlap of characteristics) and in terms of common absence of certain characteristics (negative overlap). Just as the presence of certain body characteristics may help in classifying animals, the absence of horns or other characteristics may also be of value. According to any classification scheme, positive and negative overlap can be used in assessing degree of similarity. By using both of these dimensions of overlap, minuteness of resemblence and multiplicity of similarity ~~is~~ are maximized. Simpson has noted that this is important in any taxonomic work,[40] but when dealing with taxonomic inquiry into organizational behavior in education, a rather delimited domain, such maximization is essential. The subjects of this study may be put in perspective in Linnaean terms to reveal this necessity for maximizing the comparison base.

Kingdom: Human Behavior
Phylum: Human Behavior in Western Cultures
Class: Human Behavior in America
Order: Human Behavior in Organizations
Family: Human Behavior in Public Organizations
Genus: Human Behavior in Educational Organizations
Species: The results of this inquiry

It follows that to group specimens at such a level in a hierarchy of human behavior, a substantial number of characteristics must be used and a high degree of overlap (positive, or positive *and* negative) must be evinced. Systems schemes two and three together provide a total of 312 potential characteristics. Use of the schemes in this study indicates the characteristics can in fact be found in specimens of behavior from educational organizations and that they are not duplicative or redundant. The total number of characteristics should, however, be reduced to 267, since in scheme two a number of the more generic, hierarchical (or embracing) concepts were not used. (The hierarchical nature of this scheme rules out the use of some characteristics even though it is often not possible to work at the finest level of specificity due to data limitations.) At times, higher order categories must be employed in any such scheme. Some were, but 45 of the more generic categories were not and this reduced the number of usable characteristics in the two schemes to 267.

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[40] Simpson, *op. cit.*

Since no established criteria exist relative to determining the degree of overlap needed for formulating taxonomic groupings using the numerical approach and any such criteria as are used relate ultimately to the purpose at hand, it was decided to examine the degree of overlap between all pairs of specimens and to determine from this examination a level that would begin to order the specimens into distinct groupings. Perusal of the computer data on overlap between each specimen and each other specimen revealed that two pairs of specimens overlapped at a 97% level when accounting for common presence and absence (positive and negative overlap) relative to the 267 usable characteristics. Another pair of specimens overlapped at a 96% level and five pairs of specimens had a 95% overlap level. It seems almost too obvious to point out that these overlap levels certainly are indicative of similarity. On some 8 pairs of specimens, positive and negative overlap (common presence or absence of characteristics) using the systems classifications (schemes two and three) was 95% or greater.

Since only 12 of the total of 90 specimens overlapped at the 95% or better level it was deemed advisable to seek overlaps at a lower percentage level. The 93% (or greater) level was then used to see the extent to which specimen similarities existed. For specimens to have at least 93% attribute commonality, a total of 247 characteristics would need to be shared either positively and/or negatively. The pairs of behavioral units that overlap at this criterion level (or better) are listed in Chart I.

From this listing of paired relationships, it can be seen that a number of specimens or behavioral units overlap with several other units. For example, behavioral unit 75 overlaps with unit 70 at the 97% level, with unit 71 at the 96% level, with units 66 and 45 at the 94% level, and others at the 93% level. Also, unit 65 overlaps with units 66 and 88 at the 95% level and with unit 75 at the 93% level. At the 93% criterion level, it is apparent that several behavioral units begin to cluster together and fall into distinct groupings. For example, units 2 and 4 overlap at the 94% level, units 2 and 7 at the 94% level, and units 4 and 7 at the 93% level. It follows

CHART I

Paired Relationships of Behavioral Units at Selected Overlap Percentage Levels Using Systems Classification Schemes Two and Three*

Overlap Percentage	Behavioral Units
97%	48 and 51; 70 and 75
96%	71 and 75
95%	41 and 83; 65 and 66; 65 and 88; 66 and 71; 69 and 84
94%	2 and 4; 2 and 7; 10 and 11; 11 and 68; 19 and 70; 40 and 41; 41 and 61; 45 and 75; 64 and 73; 66 and 75; 69 and 77; 70 and 71; 78 and 79
93%	4 and 7; 14 and 19; 35 and 70; 35 and 75; 39 and 75; 43 and 80; 50 and 84; 56 and 75; 60 and 77; 61 and 76; 63 and 78; 65 and 75; 69 and 75; 70 and 88; 71 and 88; 83 and 86; 83 and 87

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*Numbers other than percentages in this chart refer to the behavioral units that were the objects classified in this study.

that units 2, 4, and 7 together may form a potentially usable taxonomic group. Such a grouping may possibly be at the species level (see the Linnaean hierarchy above) relative to an ultimate taxonomy of human behavior.

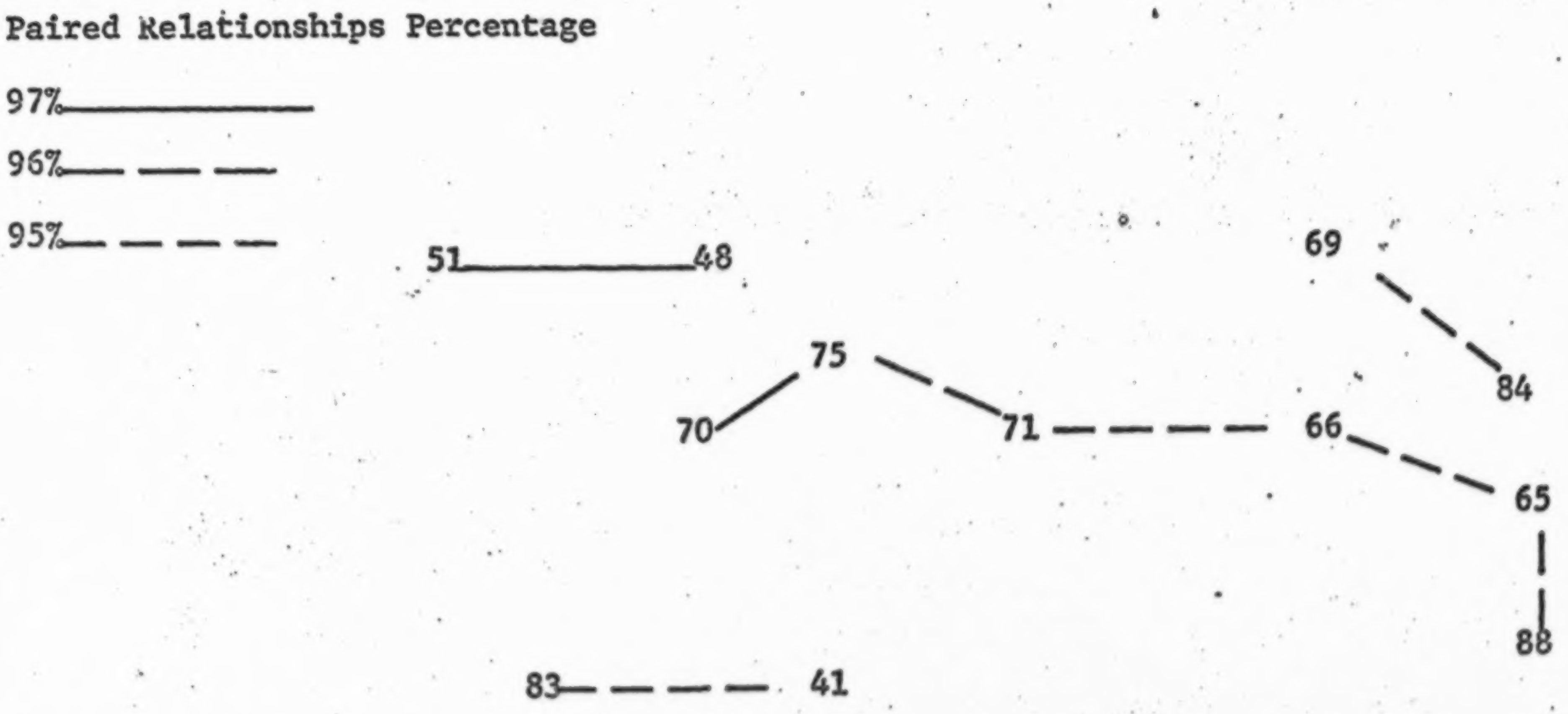
The clustering of specimens or the taxonomic groupings resulting from the systems characterization of the subjects of this inquiry can be best illustrated by observing the linkage of paired relationships between behavioral units at two arbitrary overlap percentage levels. First, if we look at the clustering of specimens or behavioral units sharing at least 95% of their characteristics with at least one other specimen, four distinct clusters emerge. These taxonomic groupings appear in Figure 7. Three of the clusters involve only two behavioral units but one cluster contains six behavioral units. Each may be conceived as a species of organizational behavior in education and the one species embracing six behavioral units may potentially contain several subspecies.

The 95% overlap level accounts for only 12 (or 13%) of the objects classified in this taxonomic inquiry and, at best, is an arbitrary designation of criterion level. It is important to look further and to observe the kind of clustering that occurs using another criterion level. Using the 93% (or better) level of overlap, 40 behavioral units or approximately one-half of the classified objects fall into taxonomic groupings. These are revealed in Figure 8.

FIGURE 7

Taxonomic Groupings by Paired Relationships at the 93% (or greater) Level Using Systems Classification Schemes Two and Three*

(N = 12, 13% of the Behavioral Units)

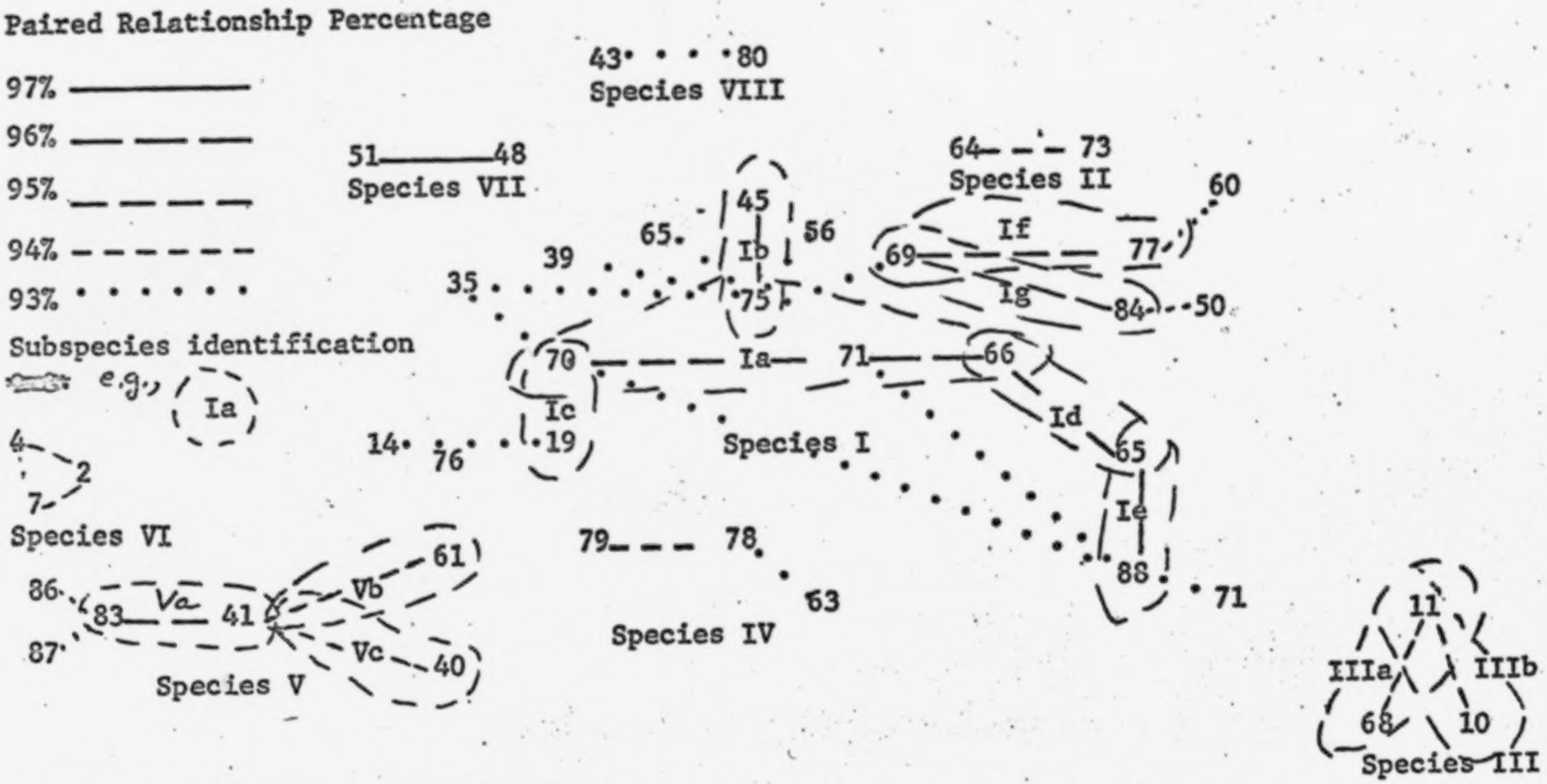

Paired Relationships Percentage
97%
96%
95%
51
48
75
70
71
66
69
84
65
88
83
41

---

*Numbers in this figure refer to the behavioral units that were the objects classified in this study.

FIGURE 8

Taxonomic Groupings by Paired Relationships at the 93% (or Greater) Level Using Systems Classification Schemes Two and Three*
(N = 44% of the Behavioral Units)

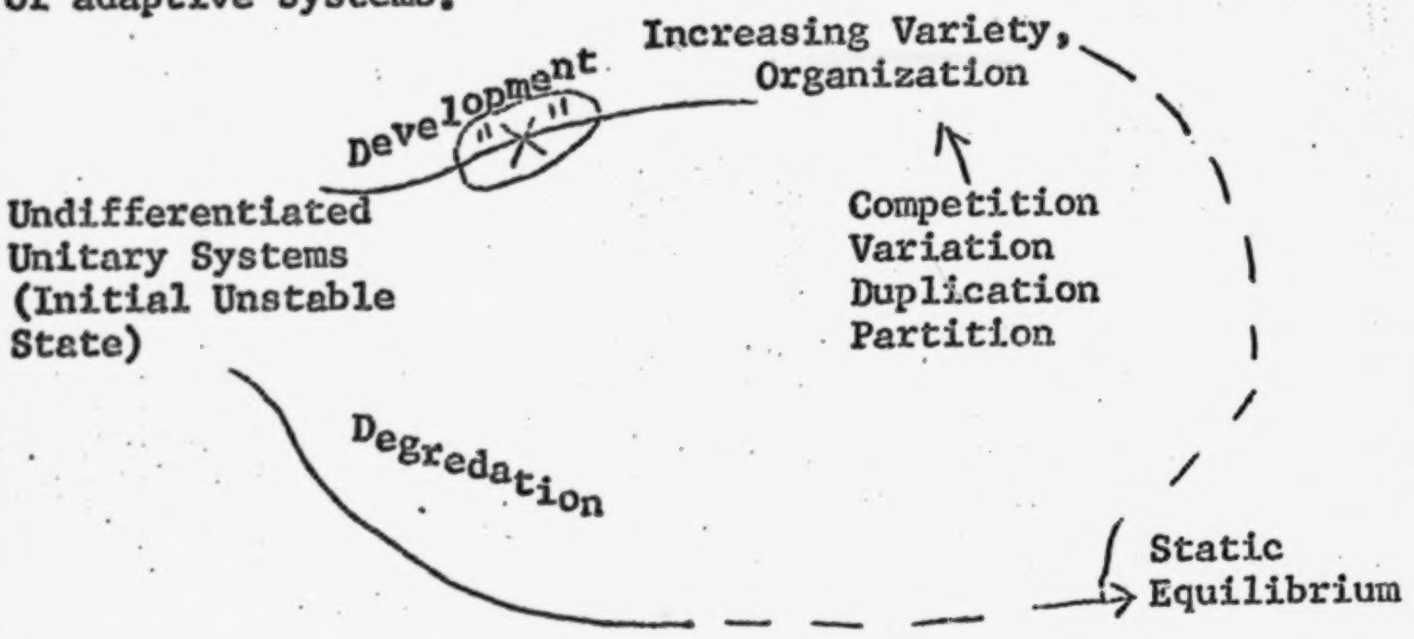

Paired Relationship Percentage
97%
96%
95%
94%
93%
Subspecies identification
e.g., Ia
43
80
Species VIII
51
48
Species VII
64
73
Species II
60
If
69
77
Ig
84
50
39
65
45
Ib
56
75
35
70
Ia
71
66
Ic
14
76
19
Species I
Id
65
Ie
88
71
4
2
7
Species VI
79
78
63
Species IV
86
83
Va
41
Vb
61
Vc
40
87
Species V
11
IIIa
IIIb
68
10
Species III

---

*Numbers in this figure refer to the behavioral units that were the objects classified in this study.

It can be seen that the behavioral units or specimens in Figure 8 fall into eight rather than four distinct groupings. By moving to a lower overlap level, one of the groups (the largest in the previous cluster diagram) is linked to another of the formerly district groupings and five additional taxonomic groups emerge. At this criterion level, subspecies clusters are more graphically revealed within the distinct (or species) groupings. Particularly within the group or species with the largest membership, a number of possible subspecies may be identified.

These groupings can be put into perspective in still another way. Marney and Smith in their rudimentary taxonomy of adaptive systems offer the following model of the process of the development of adaptive systems.[41]


Increasing Variety,
Organization
Development
Undifferentiated
Unitary Systems
(Initial Unstable
State)
Competition
Variation
Duplication
Partition
Degradation
Static
Equilibrium

---

[41] N. M. Smith, and M. C. Marney, op. cit., p. 115.

In terms of the evolutionary dimension of organization and organizational behavior, the objects classified in this research can be placed roughly in the area "X" on the Marney-Smith model. Clues to this placement are the greater tendency toward negentropy than equilibrium in the specimens, the lack of progressive segregation found indicating a high level of system differentiation, the ability of the organizations to maintain and even move their steady states to a higher level, and the tendency to regulate their steady states quickly, to name a few for illustrative purposes. These species are at an intermediate level of organizational development and may tend to be different from species derived from organizational contexts which would fall at other points along the Marney-Smith developmental model.

It can be seen that systems classification schemes two and three do provide characterizations that could be used to sort specimens and generate taxonomic groupings through the numerical approach to taxonomy and that these groupings can be placed into an evolutional perspective.

Inspection analysis of the results of the output analysis classification scheme (systems scheme four) in terms of scale profiles supports the groupings generated by the paired overlap relationships resulting from classifications according to schemes two and three above.[42] Members of the groupings as delineated in Figure 8, whether at the species or subspecies level, have identical or quite similar profiles in terms of the systems scheme four classifications.

An additional analysis of scheme two and three classifications using only positive overlap of characteristics and operating on a 70% or better criterion level resulted in a similar set of groupings. Although these groupings (see Chapter Addendum III) did not corroborate completely those in Figure 8 to the degree that the scheme four profile analysis did, the similarity between the classes or species generated is quite interesting. It should be noted that in using only positive overlap scheme three tended to exhibit greater discriminatory power than scheme two. Obviously, further analysis is required to fully comprehend the similarities and differences in the positive, and positive and negative overlap generated groupings.

Although the foregoing analysis is arbitrary and terse, some potential of the schemes and systems theory as a basis for taxonomic research into organizational behavior can be witnessed. Before the full potential of these schemes and systems concepts can be assessed, the more significant test of a classification strategy for taxonomic inquiry must be applied: do the above taxonomic groupings have a potential to contribute to the understanding of the behavioral units so grouped? This question, although most pertinent, cannot be as easily answered as the first criterion question (Do the schemes sort the behavioral units?) due to the exploratory nature of this research, the limited number of behavioral units classified, and the extent of analysis undertaken.

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[42] The comparison of profiles for members of the groupings generated by overlap relationships revealed a high degree of similarity within groupings. Dissimilarity was likewise evinced between groupings.

By examining the characteristics of members of the groupings manifest in Figure 8, some indication can be given to the ultimate question relating to the potential of the systems approach for producing groupings which contribute to the understanding of the behavioral units studied. Since each linked pair of units overlaps at a high percentage level and a great number of characteristics are similar, the classifications of members of each species and subspecies in Figure 8 were examined to determine essential characteristics or those characteristics that appeared determinant in the generation of the groupings of the behavioral units. Such characteristics may be construed as the "essence" of the similarity of the members of each species. Charts II and III set forth the essential characteristics of selected species and subspecies from the groupings in Figure 8. It can be observed that these characteristics not only differentiate the groupings but also have a potential for use in deriving arche-

CHART II

Essential Characteristics as Revealed by the Classifications of Behavioral Units in Species II, VI, VII and VIII*

I. Input-Output Linkage Scheme:

	Species II	Species VI	Species VII	Species VIII
Input	13 25 28 40 47	4 13 25 27 35 40	2 9 17 28 30 35 46	2 17 25 28 35 40
Subsystem	51	(51) (101) 102	52	60 61 118
Output	173 193 212 220 221	158 173 179 182 192 212 218	158 179 180 182 185 217	158 182 187 188 193 196

II. System States and Processes Scheme:

Species II	Species VI	Species VII	Species VIII
Input 304 Steady State 327 Feedback 347 and 353 Negentropy 364 Equilibrium 363	Input 304 Steady State 324 Feedback 348 Negentropy 356 or 360 Equilibrium 367 and 383	Input 304 Subsystems 330 or 331 Feedback 351 Negentropy 360 Equilibrium 367	Input 303 Steady State 327 Subsystems 330 Negentropy 360 and 372 Equilibrium 367 and 383

III. Output Analysis Scheme:

Species II	Species VI	Species VII	Species VIII
Less Open System	Open System	Less Open System	Open System

---

*Numbers in this chart refer to the numbered characteristics on systems worksheets II and III used to classify the behavioral units or subjects of this study.

CHART III

Essential Characteristics as Revealed by the Classifications of Behavioral Units in Subspecies Ia, Ic, and Ig*

I. Input-Output Scheme:

	Subspecies Ia	Subspecies Ic	Subspecies Ig
Input	3 28 40 46 or 47	2 3 28 34 40	2 3 4 13 33 46
Subsystem	51 74	51	52 107
Output	159 or 191 196 217 or 221	159 217	158 182 196 217

II. System States and Processes Scheme:

Subspecies Ia	
Input	303
Steady State	324
	and 326 or 327
Subsystems	330
Negentropy	356 or 360
	and 372
Equilibrium	367
	and 383

Subspecies Ic	
Input	301
	and 303
Output	307
Subsystems	330
Negentropy	356
Equilibrium	367
	or 371

Subspecies Ig	
Input	300
I-O Relationship	318
Steady State	326
Feedback	353
Negentropy	360
	and 372
Equilibrium	367
	and 383

III. Output Analysis Scheme:

Subspecies Ia	Subspecies Ic	Subspecies Ig
Open System	Somewhat Less Open System	Open System

---

*Numbers in this chart refer to the numbered characteristics on systems worksheets II and III used to classify the behavioral units or subjects of this study.

types[43] and relating species at higher taxonomic levels.

Note in Chart II that the species selected for illustration can be differentiated, for example, in terms of operand input. In species II and VI, the behavioral input is rational; in species VIII it is irrational; and in species VII, it is both rational and irrational. Dirrerentiation can also be evidenced in terms of the functional subsystem(s) used to transform input into output. Species II reveals use of the administrative subsystem of decision-making and species VI of the administrative subsystem of decision-making and the personnel subsystems of recruitment and selection. Species VII evinces use of the administrative subsystem of communication and species VIII the administrative subsystem of rules and regulation enforcement and interpretation as well as the personnel subsystem of pupil control. Further, output characterization contributes to differentiation. In species II, operational plans are produced, in species VI information and operational plans result, in species VII information is produced, and in species VIII information is produced and transmitted. Finally, the species can be differentiated in terms of several systems properties (e.g., tendency toward negentropy or equilibrium) and "openness." And, as can be expected (at the species level) similarities between the groupings can be noted in Chart II. These similarities indicate potentially useful characteristics for grouping at higher taxonomic levels and can be used in formulating archetypes.

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[43] Simpson, op. cit., p. 47 ff.

The selected subspecies in Chart III can likewise be analyzed, but space limitations dictate against this.

From the above terse discussion of Chart II, and analysis of the taxonomic groupings, it is held that each of the generated taxonomic groups can be described in terms of concepts from systems theory and such a description differs from one drawing on existing conceptual frameworks in the field of educational administration. To the extent that systems theory has a potential for advancing the understanding of behavioral phenomena, the systems approach to taxonomy has potential for realizing the understanding criterion discussed eariler. At least, evidence is given that taxonomic groupings resulting from the numerical analysis of systems characterizations may facilitate understanding of the objects classified through concepts that have been useful in a number of fields and which differ from current organizational nomenclatures.

Taxonomic Groupings Using the Theoretical Approach--The theoretical approach to formulating taxonomic groupings as pointed out in Chapter

II involves a prior conception of the key or important properties or characteristics to be used in ordering the phenomena under study. These characteristics (attributes and/or variables) are derived logically or deductively from a body of theory and resulting taxonomic classes or groupings are theoretical entities. Although the systems classification schemes were devised to maximize the number of characteristics used in classifying the subjects of this research and lend themselves well to the numerical approach, the schemes can as well provide data that can be used in generating theoretical taxonomic groupings. In shifting to theoretical analysis it is obvious that a selection process is required to get at the key properties or concepts from systems theory for grouping behavioral units or specimens into taxonomic groups.

The application of the theoretical approach to formulating taxonomic groupings, therefore, involved a logical strategy to move from systems theory to usable characteristics in systems classification schemes two and three. ¶ From the literature on open systems the key property of open systems seem~~s~~ed to be that of growth or development in terms of increasing differentiation, order, variation, and complexity. As an open system evolves it combats the entropic tendency by drawing upon itself, its resources, and its environment in order to maintain its life state. It does this through the processes of differentiation, ordering, and variation.

After having identified the above as the ~~described~~ key property of open systems, the concepts of systems theory were explored to determine the dimensions of open system activity which contribute to the property of increasing differentiation, order, variation, and complexity (or system "openness"). Three such dimensions or "factors" were deduced--rationality, feedback (evaluative information), and steady state (or the dynamic ratio between system components). Obviously rationality (reason and purpose) is essential to the development of an open system in that maximizing growth involves conscious, well-designed, and reasoned strategies for utilizing resources and drawing upon the environment. Likewise, evaluative information is required by a system in assessing the wisdom and viability of its selected courses of action and in capitalizing on experience. Finally, steady state maintenance and development is necessary in sustaining a dynamic and maximizing relationship~~s~~ among system components.

The systems classification schemes two and three were ~~then~~ examined to identify characteristics in the schemes that could be used to characterize the foregoing dimensions or factors. It was found that the rationality and irrationality of input and output could be assessed through scheme two characterizations along with the formality or informality of control structures. These characteristics of a behavioral unit would give indication of the factor rationality. The feedback factor could be characterized by the positive or negative, external or internal, and ongoing or post facto feedback concepts ~~on~~ in classification scheme two and by the unlimited-limited-none concept from scheme three. To characterize the steady state factor, the input-output relationship, steady state characteristics, and the relationship of functional subsystems as classified in scheme three could be employed. Each of the above characteristics or sets of characteristics were explored in terms of discriminatory power to assess their grouping potential. Due to frequency of use (the loading in certain sets of characteristics) four were eliminated since they tended not to discriminate between the subjects of this study.

Resulting from the "logical" or deductive "factor analysis" the key property of open systems was identified, three factors (or dimensions of system activity) that contribute to the key property were deduced, and eight sets of characteristics for assessing the factors were determined from systems classification schemes two and three. Chart IV shows the theoretical analysis scheme developed for grouping the subjects of this study into taxonomic groups using the theoretical approach.

The data on classification schemes two and three were used to characterize each behavioral unit or specimen according to the theo-

CHART IV

Theoretical Analysis Scheme for Formulating Taxonomic Groupings Using Systems Theory

Key Property of Open Systems	Factors		Characteristics
Increasing order, differentiation, variation, and complexity	Rationality	Input	Rational Rational and Irrational Irrational
		Output	Rational Rational and Irrational Irrational
	Feedback	Amount	Unlimited Limited None
		Kind	Negative Negative and Positive Positive
		Nature	Ongoing Ongoing and Post facto Post ~~F~~acto
	Steady State	I-O Relationship (Energy)	Increase Equivalence Loss
		Steady State (Type)	Responsive Adaptive Inflexible
		Functional Sub-system	Close Workable Impeded

move
down
nd
center)

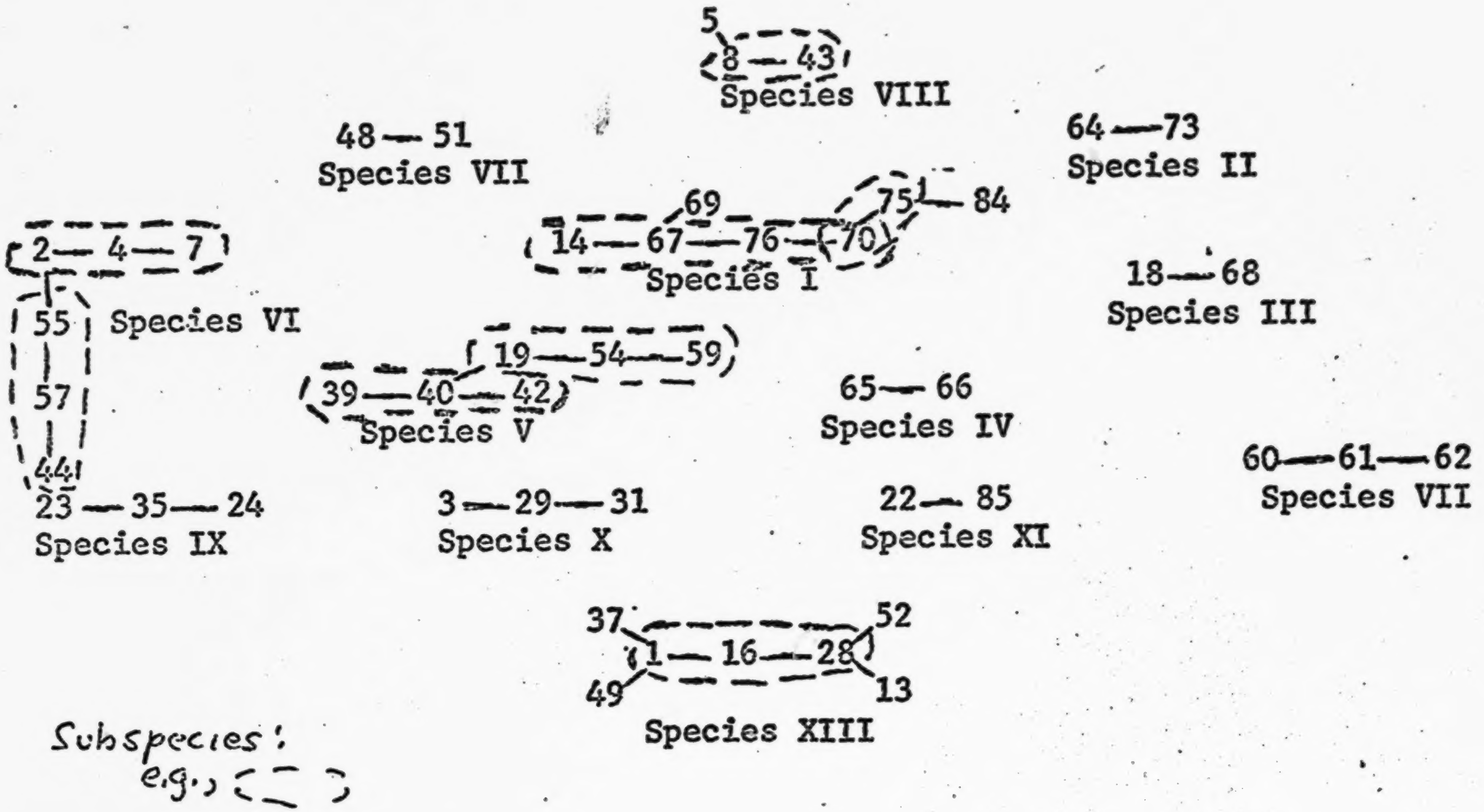
retical analysis scheme in Chart IV. For example, input was checked as being rational, rational and irrational, or irrational. Amount of feedback was checked as being unlimited, limited, or non-existent (none). The other characteristics were checked in the same manner. Following the classification of the 90 behavioral units, the classifications were analyzed in order to [illegible] determine (1) whether taxonomic groupings could generated, and (2) whether the groupings would contribute to the understanding of the objects classified.

Figure 9 reveals the groupings (or species and subspecies of organizational behavior) that resulted from the theoretical analysis. Members of any grouping are identical on at least seven of the eight characteristics. (A criterion specification allowing variation on one characteristic was employed.)

From Figure 9 it can be witnessed that the theoretical approach using data from the systems classification schemes two and three also sorts or orders the subjects of this research into taxonomic groups. Note in Figure 9 the similarity and differences between the groupings appearing in Figure 8. Several of the species formulated by the two approaches are identical, others show some variation, and still others are different. Over all, ~~most~~ more distinct groupings (13 as opposed to 8) are generated by the theoretical approach, and the membership size of the groupings tends not to be as large as in the numerical approach.

FIGURE 9

Taxonomic Groupings
Generated by the Theoretical Analysis Scheme*
(N=48, 53% of the Behavioral Units)


5
8 — 43
Species VIII
48 — 51
Species VII
64 — 73
Species II
69
75 — 84
14 — 67 — 76 — 70
Species I
2 — 4 — 7
18 — 68
Species III
55
Species VI
19 — 54 — 59
57
39 — 40 — 42
Species V
65 — 66
Species IV
44
60 — 61 — 62
Species VII
23 — 35 — 24
Species IX
3 — 29 — 31
Species X
22 — 85
Species XI
37
52
1 — 16 — 28
49
13
Species XIII
Subspecies:
e.g., ( )

---

*Numbers in this figure refer to the behavioral units that were the objects classified in this study.

Space
Better

As in the numerical approach, the characteristics of the members of the theoretically generated groupings were examined in order to assess the more basic criterion question of do the groupings contribute to the understanding of the behavioral units so grouped. Again, due to the exploratory nature of this research, the limited sample, and the extent of analysis realized, this criterion question, though fundamental, is more difficult to answer. For illustrative purposes Chart V shows the characterizations of four selected species generated by the theoretical approach to formulati~~ve~~ng taxonomic groupings. The Chart reveals that although the species have some similar characteristics, when compared one to another, in general, the characterizations differ in a number of ways. For example, in species II and VI the input and output are rational, in species VII the input and output are both rational and irrational, and in species VIII the input is rational and irrational and the output is rational. Note that in species VIII the amount of feedback is unlimited, the feedback is ongoing, the steady state is responsive and the input-output relationship~~s~~ tends to be maximizing (in terms of energy equivalence or increase). In contrast, species VII is characterized by limited feedback, an inflexible steady state, and an input-output relationship that results in energy equivalence.

Such generalizations and others that could be made indicate (as in the numerical approach analysis) that the systems derived taxonomic groupings can be described by concepts differing from

CHART V

Characterization of Selected Species from the Theoretical Analysis Approach

Factor		Characteristic	Species II	Species VI	Species VII	Species VIII
Rationality	Input	Rational	X	X		
		Rational and Irrational			X	X
		Irrational				
	Output	Rational	X	X		X
		Rational and Irrational			X	
		Irrational				
Feedback	Amt.	Unlimited	X			X
		Limited		X	X	
		None				
	Kinds	Negative				
		Negative and Positive	X			
		Positive		X	X	X
	Nature	Ongoing	X		X	X
		Ongoing and Post facto				
		Post facto		X		
Steady State	I-ORe***	Increase				X or
		Equivalence	X or	X	X	X
		Loss	X			
	S. S.**	Responsive		X or		X
		Adaptive	X	X		
		Inflexible			X	
	Sub.*	Close	X	X		
		Workable			X or	X
		Impeded			X	
			[illegible]	[illegible]	[illegible]	[illegible]

*-Subsystems
**-Steady State (Type)
***-Input-Output Relationship

standard conceptual frameworks as are found in the literature on educational organization and administration. Since these descriptive and explanatory concepts are in fact systems concepts, it can be concluded that to the extent systems theory is useful in understanding social and behavioral systems, the systems generated taxonomic groupings may also contribute to increased understanding.

Summary--Systems theory is revealed through this analysis as a promising theoretical ~~strategy~~ base for taxonomic inquiry into organizational behavior in education. The classification schemes devised and tested in this study proved to be usable devices for classifying behavioral units and the classifications of the subjects of this study could be sorted or ordered into taxonomic groupings using both the empirical (numerical) and theoretical approaches to formulating such groups. The resulting groupings could, further, be placed into evolutional perspective and described in terms of a number of systems concepts.

Actually, the analysis opens more avenues for exploration than it provides closure relative to explanation or answers to questions. In addition to further application of the systems schemes to organizational behavior, more extensive analysis of existing classifications and data is mandated. Unfortunately, time prevented the researchers from exhausting the many leads and intriguing possibilities unearthed by the terse analysis already completed. Apologies, however, are not being offered since the goal of any research is to unover new and more exciting arenas for inquiry. To the extent that this has been achieved the effort is significant.

Conclusions and Implications

This chapter attests to the prospects of systems theory as a classification approach and taxonomic device. Not only do the devised classification schemes give evidence of providing a basis for sorting specimens into differentiated groupings but also the resulting groupings can be characterized in terms of concepts that offer new and fruitful ways for analyzing and explaining organizational behavior in education.

Some caution must, however, be extended in that this is a first venture into taxonomic inquiry using behavioral units as objects of classification. The devised classification schemes are not tested or refined instruments for taxonomic research but represent, rather, an initial attempt at using systems concepts in a specific taxonomic endeavor. Before the schemes can be claimed valid and reliable additional analysis of data needs to be made and numerous applications to more and different behavioral specimens should be undertaken.

Also, the products of data analysis need to be viewed as merely tentative and/or ~~and~~ indicative. Interestingly, and not expected, the analysis potential of the systems classifications exceeds the scope of this project. Therefore, the taxonomic groupings (species and subspecies) herein discussed are not the products of as rigorous analysis as the data appear to warrant. The groupings are to an extent arbitrary and are generated for illustrative purposes to show the potential of the systems schemes for taxonomic work. More intensive analysis may substantiate that achieved at present but could well go beyond the current findings and reveal even more productive taxonomic groupings and relationships.

As a result of this aspect of the larger research project, a number of leads are provided for taxonomic research using systems approaches. First, additional analysis of the classifications of the subjects of this taxonomic inquiry needs to be undertaken. Unfortunately, analysis of the classifications, in effect, merely skims the surface relative to ultimate possibilities. Second, applications of the schemes to behavioral units from other educational organizational contexts should be made and appropriate analyses accomplished. Third, the systems schemes should be applied to other levels of behavioral units even to long-term histories of organizations to see if the approach may be applicable at various levels of behavioral analysis. Fourth, the numerical and theoretical approaches as well as blends of the approaches warrant additional exploration to determine the most viable procedure ~~strategy~~ for generating taxonomic groupings. Fifth, and as a result of further applications, an attempt should be made to see if the taxonomic groupings resulting from the systems classification approach can facilitate the development of an evolutionary taxonomy of organizational behavior.

Not all of the research implications of this chapter are for taxonomic research. Suggested as well are a number of directions for normative and experimental research. In regard to the former, such concerns as the following might be investigated: What are the kinds of input variables that impinge on educational organizations? What resources are used (and how are they used) by members of educational organizations in processing organizational work? What organizational subsystems are most and least well developed (and functional) in educational organizations? What dimensions of output are emphasized in work in educational organizations? and What is the nature of feedback (both external and internal) in and to educational organizations?[44] In regard to the latter (experimental research), inquiry might seek to test the quantitative and qualitative effects of categories of input on subsequent output; to check the relative productivity of system activity through various processing subsystems; to assess the effects of positive and negative feedback in the educational organizational context; to discover process and relational variables that enhance the maximization of organizational (system) openness; and to predict possible means for combating organizational equilibrium (entropy) in complex, structured organizations.

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[44] Or, is the nature of feedback in educational organizations such that it enhances the dynamic qualities of the system, or permits maximal organizational development and/or change? If the nature of feedback as revealed in the units of behavior in this study is typical of organizational feedback in education one can wonder whether educational organizations are relatively open or relatively closed. (Cf., footnote 39, above).

Further, it is hoped that curious readers will find in the brief and indicative analysis in this chapter leads to specific research hypothesis. Illustrative of this possibility are the following:

1. If maximal use of functional processing subsystems is made then organizational productivity will be maximized.
2. If negative feedback is encouraged and used then organizational development (growth) will be enhanced.
3. If external feedback is encouraged and used then organizational development (growth) will be facilitated.
4. If an organizational system increases its processing of special or unique inputs then organizational differentiation, variation, and complexity will be increased.
5. If a high degree of irrationality exists in the behavior in an organization then organizational "openness" will be restricted.
6. If informal control structures are used to process irrational input then output will exhibit a high degree of irrationality

Implications can also be drawn from this chapter relative to the development of theoretical and conceptual formulations. Certainly the systems classification and grouping of behavioral units involves the use of new and different concepts for explaining organizational phenomena and their relationships, similarities, and dissimilarities. Hopefully, such concepts will provide vehicles for more meaningful descriptions of organizations and organizational behavior or will, at least, enhance our current understanding of such phenomena. It is anticipated that the theoretician can find here numerous systems concepts and relationships of value to his work. The products of systems approaches in taxonomic research, should they be expanded and empirically productive, can assist greatly in codifying, classifying, placing in perspective, and relating various aspects and dynamics of organizational behavior. The analysis in this chapter suggests increased use of systems notions by organizational theorists in the immediate future as heuristic means toward explanation and prediction of behavioral events and sequences.

All in all, increased exploration along the above lines offers intriguing directions for advancing the study of organizational behavior in education. This systems approach to taxonomic inquiry has indicated the potential of this mode of thought as voiced in the dialogues of systems enthusiasts for some time. Systems theory appears to be rich in explanatory and relational power.

Chapter Addendum I

Definitions of Terms on the Systems Classification Worksheets

I. Operational Definitions—Worksheet I
Comprehensive Systems Characterization Scheme

Actors: Active participants (conversants or listeners) in a behavioral situation. (This does not include extra- or intra-system forces who function as stimuli external to, but effective upon, the situation participants.)

Inputs: System stimuli, resources, controls, and processes.

Organizational Mechanism: Devices or means used by an organizational system in generating output (e.g., meetings, conferences, interviews, individual work processes, etc.)

Organizational Sub-System: An arbitrary sub-division of a larger system. This concept usually encompasses role specification, hierarchical levels of operation, and certain organizational means of task accomplishment.

Outputs: The productive and/or affective results or outcomes of system action.

Locus of Forces: Places from which arise or originate impingements on the system which may be expressed relative to sub-systems, the system itself, and/or the environment. Such impingements may be relatively equivalent in impact or of major or minor import.

II. Operational Definitions--Worksheet II
Input-Output Linkage (Subsystems) Scheme

1.0 Inputs: Action stimuli (variables); the state of a system at some initial time, T_1.

1.1 Operands: Those (input) variables which are acted upon.

1.11 Information: Stimuli transmitted to the system either as visually, orally, or in written form.

1.111 Message: A written or spoken communication transmitted directly or indirectly to or within the system.

1.112 Inquiry: A written or spoken query or request transmitted directly to or within the system.

1.113 Expectations: The anticipation of specific system action.

1.114 Strategy: A planned approach or method of operation developed to guide system action.

1.12 Energy: (behavior) Behavioral stimuli transmitted to the system.

1.121 Rational Behavior: Reasoned (purposive) action or speech.

1.1211 Performance: Execution or accomplishment of an act.

1.1212 Interaction: Execution or accomplishment of an act through intercommunication by participants or actors.

1.122 Irrational Behavior: Expressive action or speech which gives evidence of no prior sensible or reasoned consideration.

1.1221 Performance: cf. 1.1211

1.1222 Interaction: cf. 1.1212

1.13 Resources: Materials (supplie~~d~~s or commodities) or human potentialities transmitted to the system, which may be processed, used or acted upon in system action.

1.2 Operators: Those (input) variables which act upon operand(s) input so as to transform it into output.

1.21 Control Structures: Organizational criteria in the form of division of labor, specification of authority and responsibility, and functional role prescription through which operand(s) input is acted upon.

WORKSHEET II - Definitions continued

1.211 Formal: The conscious or unconscious prescription of organizational behavior.

1.2111 Legitimized: The consciously devised, sanctioned prescription, or establishment of organizational behavior.

1.2112 Institutionalized: The emerging or accepted (traditional) mode of organizational behavior.

1.212 Informal (operative role): Deliberate or casual action performed without consideration of prescription or acceptance.

1.22 Operations (processes): Work processes through which operand(s) input is acted upon.

1.221 Decoding: The process by which information is translated into a form usable in system information and action.

1.222 Advisory: The process in which information is transferred with concomitant caution and/or recommendation.

1.223 Decision-making: The process where alternative of action are considered and a choice of action is made.

1.224 Communication: The process of transferring information.

1.225 Memory: The process whereby previously accumulated data are stored.

1.2251 Formal memory: The conscious storage of previously accumulated data.

1.2252 Informal memory: The unconscious storage of previously accumulated data.

1.226 Work: The process whereby tasks are performed.

1.2261 Routine: The process whereby customary tasks are performed.

1.2262 Special: The process whereby unique tasks are performed.

1.227 Rectification: The process wherein information is amended or checked to establish accuracy and/or refinement.

1.228 Encoding: The process whereby information is reduced to a usable form.

WORKSHEET II - Definitions continued.

1.23 Personnel: System members who actively process operand(s) input.

1.231 Individual: One person within the system who actively and singly processes operand input.

1.232 Individuals: Two or more persons ~~person~~ not working together who actively and singly process operand input.

1.233 Small group: Two to fifteen persons who work together to actively process operand input.

1.234 Large group: Fifteen or more persons who work together to actively process operand input.

2.0 Functional Sub-Systems: An arbitrarily delimited dynamic subdivision of a system.

2.1 Administrative: That subsystem which engages in organizational executive and managerial functions and processes.

2.11 Decision-making: The subsystem function whereby alternatives of action are considered and a choice for action is made.

2.12 Communication: The subsystem function of transferring information.

2.13 Policy: The subsystem function of determining organizational mission and courses of action.

2.14 Rules and Regulations: The subsystem function providing directives and operational specifications of organizational member conduct and action.

2.15 Arbitration (of conflict): The subsystem function concerned with resolution or settlement of dispute.

2.16 Research: Systematic study, investigation and inquiry within a designated area of knowledge or about a given problem.

2.17 Work: The subsystem function whereby tasks are performed.

2.2 Supervisory: That subsystem which engages in the regulation and improvement of organizational members.

2.21 Control: The subsystem function in which work or workers are regulated through application of organizational authority and constraints.

WORKSHEET II - Definitions continued

2.22 Development: The subsystem function whereby organization members improve their skills and competencies.

2.23 Advisory: The subsystem function through which information is transferred with concomitant caution and/or recommendation.

2.3 Instructional: That subsystem which engages in the planning, development, execution, evaluation, and revision of the full range of school program activities, materials and processes.

2.31 Teaching: The subsystem function of providing learning experiences for clients.

2.32 Curriculum: The subsystem function of specifying formal learning experiences for clients.

2.33 Extra-curriculum: The subsystem function of specifying learning activities which may take place outside the formal classroom situation (as may occur in clubs, organized sports, etc.).

2.34 Materials: The subsystem function whereby means, mechanical and written, are provided which abet the teacher and the learner in fulfilling learning objectives.

2.35 Facilitation: The subsystem function which, through policy or other means, makes the fulfillment of learning objectives more easily attainable.

2.4 Purpose Determination: That subsystem which engages in the formulation and explication of desired organizational outcomes in terms of goals and operational objectives.

2.41 Goals (educational): The subsystem function which determines school-wide general educational outcomes.

2.42 Objectives: The subsystem function through which operational specification of desired organizational behaviors is determined.

2.5 Personnel: That subsystem which engages in the maintenance of human organizational components at various levels of the organizational hierarchy including staff (professional and non-professional) and clients.

WORKSHEET II - Definitions continued

2.51 Organizational Staff: Those personnel who function within the area of organizational action toward the accomplishment of organizational goals and objectives.

2.52 Pupil Services: Those functions which are directed toward organizational clients but which are not specifically involved in classroom teaching.

2.6 Record Keeping: That subsystem which engages in the codification, maintenance, and retrieval of the totality of organizational information.

2.61 Staff: System personnel, both professional and non-professional.

2.62 Student: Those clients (enrollees) of the school who are the object of the school functioning.

2.63 Fiscal: The subsystem function concerned with financial matters relating to system action.

2.64 Facilities: Those buildings and grounds together with/or ~~with~~ the material resources they encompass which are designed for system use.

2.7 Client-Constituent Relations: That subsystem which engages in maintenance and implementation of informational and cooperative, functional arrangements with the proximal and distal human environment.

2.71 Information: The subsystem function which promulgates and corrects communication from the system to its environment.

2.72 Participation: The involvement and/or interaction of personnel of the system with non-system members for the purpose of achieving mutual goals and objectives.

2.8 Business Management: That subsystem which engages in organizational functions and processes relevant to fiscal affairs and physical facilities.

2.81 Financial Affairs: The subsystem function of management of revenue and expenditures.

2.82 Physical Plant: The subsystem function of management of the buildings, grounds, and material furnishings in which system action is performed.

WORKSHEET II - Definitions continued

2.9 Negotiation: That sub-system which engages in consensual functions and processes relative to the organization (including both system and supra-system variables.)

2.91 Employees: Salaried members of the organization.

2.92 Other Governmental Agencies: Departments of the local, intermediate, state, and federal governments.

2.93 Community: The population entity served by the school organization.

3.0 Output: Outcome variables; the state of a system at some terminal time, T_2.

3.1 Productivity: Tangible results or substantive outcomes of system action.

3.11 Product: The material outcome of system action.

3.111 Information: Communication in visual, oral, or written form.

3.1111 Written: ~~The~~ Printed or otherwise recorded information.

3.1112 Oral: Spoken information.

3.112 Decision(s): Choice(s) of action.

3.113 Policy: Statement of organizational mission or course of action.

3.1131 Formulation: The definition of a new mission or plan of action.

3.1132 Revision: The alteration through incrementation or abridgement of an existing mission or plan of action.

3.114 Rules and Regulations: Directives and operational specifications governing organization member conduct and action.

3.1141 Formulation: The definition of new directives and operational specifications governing organization member conduct and action.

3.1142 Revision: The alteration through incrementation or abridgement of directives and operational specifications governing organization member conduct and action.

WORKSHEET II - Definitions continued

3.115 Resources: Materials (supplies or commodities) or human potentialities resulting from system action.

3.1151 Personnel: Organizational members and clients.

3.1152 Course of Study: The curriculum of the school.

3.1153 Facilities: Buildings and grounds together with/or ~~with~~ their material resources which they encompass and which are designed for system use.

3.1154 Fiscal: Revenue for the funding of system action.

3.116 Planning: The design for future action.

3.1161 Strategy: A ~~S~~ystematically designed approach or method for system action.

3.1162 Operational Plans: Explicit procedural specifications for system work.

3.117 Records: Representation of previously transacted business, communications, and/or accomplishments as transmitted to formal and/or informal manuscripts and sorted into orderly collections for future references.

3.118 Research: Systematic study, investigation, and inquiry concerning a problem within a designated area of knowledge.

3.119 Contract: Written and/or verbal agreement (enforceable by law) between the formal system and others (its members or the extra-organizational milieu).

3.12 Performance: The execution or accomplishment of an act.

3.121 Behavior: The conduct of organizational members.

3.1211 Rational: Clearly reasoned action or speech.

3.1212 Irrational: Expressive action or speech which gives evidence or no prior sensible or reasoned consideration.

3.122 Decision Transmission: The communication of a decision to persons within or without the system.

3.123 Information Transmission: The communication of system knowledge to persons within or without the system.

WORKSHEET II - Definitions continued

3.124 Policy: Statement of organizational mission or course of action.

3.1241 Enforcement: Compelling system personnel, clients or constituents to adhere to policy.

3.1242 Interpretation: The formulation of judgments applicable to specific situations based upon established system policy.

3.125 Rules and Regulations: Directives or operational specifications governing organization member conduct and action.

3.1251 Enforcement: Compelling system personnel, clients or constituents to adhere to rules and regulations.

3.1252 Interpretation: The formulation of judgments applicable to specific situations based on established system rules and regulations.

3.126 Arbitration: Resolution or settlement of dispute.

3.127 Consultation: The meeting of personnel within the system, or of system personnel with those from without the system in order to discuss organizationally relevant matters and to provide relevant information.

3.128 Work: Task performance.

3.2 Affectivity: Sensed impact or intangible outcomes of system action.

3.21 Organization: The total school system including its members and resources.

3.211 Professional Staff: Those personnel within the system who are engaged in work which requires degrees of specialized training and certification from a profession.

3.212 Non-professional Staff: Those personnel within the system whose work lies in areas designated as unskilled, semi-skilled, and skilled, and who are not certified professionally.

3.22 Clients: Those persons (that population of the environment) for which the system exists (operates).

WORKSHEET II - Definitions continued

3.221 Students: Those clients (enrollees) of the school who are the objects of the school functioning.

3.222 Parents: The fathers and mothers and/or guardians of those enrolled in the school.

3.23 Interstitial Groups: Those groups related by function to the organization but which are not a component of the organization and which derive membership from both within and without the organization.

3.231 Board of Education: The local representative polity body charged with the operation of a school(s).

3.232 P.T.A.: Any organization whose membership includes teachers, administrators, and parents of students who join together for the advancement of mutual goals, relevant to the school and/or the school system.

3.233 Citizens Advisory Groups: Those groups formed by designated action of the school board and/or the school, and which function in a fact-finding and/or recommendation-making sense with no legal powers.

3.234 Other: Groups of an interstitial nature not classifiable in the above categories.

3.24 Supra-Educational Organizations: Agencies or political entities which have legal powers and which may regulate action of systems at lower echelons.

3.241 Intermediate (County): Agencies or political entities existing on the county or comparable level of government.

3.242 State: Agencies or political entities with legislative and regulatory powers at the state level.

3.243 Federal: Agencies or political entities at the national level.

3.26 Profession: Specialists in the field of education, both teachers and administrators.

3.261 Individuals: Administrators or teachers affected singly.

3.262 Associations: Organized groups of teachers [illegible] by subject areas) and administrators.

3.263 Movements: Ideological activities undertaken by members of a profession.

3.3 Feedback: Evaluative information channeled into the system resulting from outcomes of system action (leads to adjustment of future conduct in relation to past performance).

3.31 Internal: Originating from within the system or subsystem.

3.311 Positive: Information reinforcing system action.

3.3111 Ongoing: Continuous information throughout system action.

3.3112 Post Facto: Information following the termination of system action.

3.312 Negative: Information opposing system action.

3.3121 Ongoing: Continuous information throughout system action.

3.3122 Post Facto: Information following the termination of system action.

3.32 External: Originating from without the system (proximal and/or distal environment.)

3.321 Positive: Information reinforcing system action.

3.3211 Ongoing: Continuous information throughout system action.

3.3212 Post Facto: Information following the termination of system action.

3.322 Negative: Information opposing system action.

3.3221 Ongoing: Continuous information throughout system action.

3.3222 Post Facto: Information following the termination of system action.

III. Operational Definitions--Worksheet III
Analysis of System Properties--States and Processes

Input: State of the system at some initial time, T1. This state may be described as usual, ordinary, or normative to the system (routine), as peculiar to the system (special), or as critical to the steady state of the system (crisis). Such states may be classified in terms of system work (action), system structure and maintenance (organization), or system purpose determination (policy).

Output: State of the system at some terminal time, T_2. This state may be described as usual, ordinary, or normative to the system (routine), as peculiar to the system (special), or as critical to the steady state of the system (crisis). Such states may positively fulfill system purposes (functional), may negatively fulfill system purposes (dysfunctional), or may fulfill no system purposes (non-functional).

Input-Output Relationship: The linkage of the initial and terminal states of system action. This linkage may be characterized by an immediate effective consequential relationship (direct), or one in which other system action may intervene (indirect), or one in which no congruency is apparent (none). The linkage may be further characterized when the output is of the same order as the input (unchanged), when the output is similar to the input (adapted), or when the output is completely dissimilar to the input (changed). Output may exceed input (energy increase), may equal input (energy equivalency), or may be less than input (energy loss).

Steady State (System Life State): A level of system integration characterized by a dynamic ratio of system components and properties. The "life" state of a system. As a result of system action system steady state may remain unaltered (maintained unchanged), may result in change to a more dynamic and/or functional state (progressive modification), or may revert to a prior or less dynamic and/or functional state (regressive modification). The steady state of a system may be able to withstand impinging forces (stable) or may be affected by impinging forces (permeable). Further, it may be cognizant of impinging forces and initiate action (responsive), may consciously or unconsciously encompass impinging forces (adaptive), or may not be affected by and/or ignore impinging forces (inflexible).

WORKSHEET III - Definitions continued

Relationship of Functional Subsystems: The proximity, interdependency, and/or interconnections of functional subsystems. (A functional subsystem is an arbitrarily delimited dynamic subdivision of the system.) This relationship may be maximizing (close), operationally facilitating (workable), hampered or strained (impeded), or may not exist (none). The relationship may be prescribed through the legitimized organizational structure (formal) or may result from institutionalized or ongoing role behavior or interaction (informal). Further, it may be fixed by informal or formal structure (programmed) or may evolve in the course of system action (spontaneous).

Self-regulation: The balancing and controlling of variables for purposes of survival (homeostasis). This balancing and controlling may be observed to be total (complete), sufficient for purposes of steady state maintenance (partial), less than adequate for this maintenance (minimal), or may not be observed to exist (none). This self-regulation may result from impromptu or specially devised means (ad hoc), or from non-conscious or chance means (accidental). Further, it may be mechanistic (reflexive), or resulting from rational means (cognitive) which may be either immediate or delayed.

Feedback: Evaluative information used by the system in adjustment of future conduct relative to past performance. Such information may be unimpeded (unlimited) or restricted (limited) or non-existent (none), and may flow via prescribed channels (formal) or may not adhere to fixed communication arrangements (informal). Feedback may be monitored at certain time intervals (intermittent) or continuously (continuous); it also may exist in proportion to the magnitude of difference between the required and actual value of the controlled quantity (proportional), or may exist in terms of dichotomous magnitudes--"on" and "off" (relay).

Negentropy: The state of order, differentiation and complexity.

Progressive Segregation: The hierarchical ordering of subsystems leading to their consequent independence.

Progressive Mechanization: The ordering of certain processes as fixed arrangements.

Equilibrium: The state of inertia resulting from balancing or intercancellation of system forces or variables.

IV. Operational Definitions Worksheet IV
Output Analysis Scheme
(Output-outcomes of system activity)

I. **PRODUCTIVITY** - The attainment of organizational goals; fulfillment of organizational purpose. (This can be defined as a relation between a system and the relevant parts of the external system in which it acts or operates. This relation can be conceived as the maximization relative to the relevant conditions such as costs and obstacles, of some category of output of the system to objects or systems in the external situation.)

PRODUCT UTILITY - The usefulness to the system or the external system of goods which are either consumable or which serve as instruments for a further phase of production by the system or the external system.

SERVICES UTILITY - The usefulness to the system or the external system of capacities or assistance-potential or task-completing-potentiality which serve as instruments for a further phase of activities by the system or the external system.

II. **ORGANIZATIONAL HEALTH** - The ability of an organization to maintain itself and its productivity in terms of dynamic interaction of the organization and its environment.

ADAPTABILITY - The extent to which an organization solves problems and reacts with flexibility to changing environmental demands.

IDENTITY SENSE - The extent to which an organization evinces knowledge and insight into what the organization is, what its goals are and what it is to do. (Pertinent questions are: To what extent are goals understood and shared widely by members of the organization, and to what extent is self-perception on the part of organization members in line with the perceptions of the organization by others?)

WORKSHEET IV - Definitions continued

CAPACITY TO TEST REALITY - The extent to which an organization searches out, accurately perceives, and correctly interprets the real properties of the environment, particularly those which have relevance for the functioning of the organization.

III. INTEGRATION POTENTIAL - The ability of the organization to mesh the needs of the individuals and/or groups within the organization to organizational goals.

SELF-ACTUALIZATION - The extent to which the individual as a member of the organization realizes his highest personal goals (attained or attainable through the acceptance, willingness and/or encouragement of the organization).

GROUP DECISION-MAKING - The extent to which the individual worker or group of workers is involved with management in making decision regarding the achievement of organizational goals.

INDIVIDUALS' FLEXIBILITY TO CHANGE - The extent to which the individual worker and/or worker groups willingly attempts and/or accepts innovation. (Its basis rests primarily in the security of the worker in his position or in the organization.)

IV. FEEDBACK - This is organizational evaluation (inspection and/or modification of its inputs as related to the response of the organization based upon the output of the system action).

DESIRABILITY OF - The degree to which or the amount of feedback encouraged and wanted by the organization, as reflected especially by those directly governed.

PENETRATION OF - The degree to which or distance which feedback covers from the point of re-entering the organization until it reaches the person most responsible for and holding commensurate authority for implementing change.

CHAPTER ADDENDUM II

A. Tabulation of the Use of Characteristics on Classification Worksheet II in Classifying the Subjects of this Research

	Times Used		
		1.0	INPUTS
		1.1	Operands
(1)	10	1.11	Information
(2)	36	1.111	Message
(3)	45	1.112	Inquiry
(4)	57	1.113	Expectations
(5)	7	1.114	Strategy
(6)		1.12	Energy (behavior)
(7)	1	1.121	Rational Behavior
(8)		1.1211	Performance
(9)	31	1.12111	Individual
(10)	7	1.12112	Individuals
(11)		1.12113	Group(s)
(12)		1.1212	Interaction
(13)	48	1.12121	Individuals
(14)		1.12122	Groups
(15)		1.122	Irrational Behavior
(16)		1.1221	Performance
(17)	15	1.12211	Individual
(18)	1	1.12212	Individuals
(19)		1.12213	Group(s)
(20)		1.1222	Interaction
(21)	1	1.12221	Individuals
(22)		1.12222	Groups
(23)	1	1.13	Resources
(24)	18	1.131	Material
(25)	45	1.132	Human
		1.2	Operators
(26)		1.21	Control Structures
(27)	5	1.211	Formal
(28)	67	1.2111	Legitimized
(29)	8	1.2112	Institutionalized
(30)	14	1.212	Informal (Operative role)
(31)		1.22	Operations (processes)
(32)	2	1.221	Decoding
(33)	18	1.222	Advisory
(34)	47	1.223	Decision-making
(35)	41	1.224	Communication
(36)		1.225	Memory
(37)	3	1.2251	Formal (conscious)
(38)	1	1.2252	Informal(unconscious)
(39)	1	1.226	Work
(40)	55	1.2261	Routine
(41)	12	1.2262	Special
(42)	1	1.227	Rectification(check)
(43)	5	1.228	Encoding
(45)		1.23	Personnel
(46)	31	1.231	Individual
(47)	44	1.232	Individuals
(48)	14	1.233	Small Group
(49)	1	1.234	Large Group

	Times Used		
		2.0	FUNCTIONAL SUB-SYSTEMS
(50)	2	2.1	Administrative
(51)	54	2.11	Decision Making
(52)	46	2.12	Communication
(53)		2.13	Policy
(54)	2	2.131	Formulation
(55)	16	2.132	Interpretation
(56)	5	2.133	Enforcing
(57)		2.134	Revision
(58)		2.14	Rules and Regulations
(59)		2.141	Formulation
(60)	5	2.142	Interpretation
(61)	4	2.143	Enforcing
(62)		2.144	Revision
(63)		2.15	Arbitration(of conflic
(64)	1	2.151	Intra-organizational
(65)		2.152	Interstitial
(66)		2.153	Extra-organizational
(67)	1	2.154	Between Spheres
(68)		2.16	Research
(69)	2	2.161	Operations
(70)		2.162	Program
(71)	1	2.163	Personnel
(72)	1	2.164	Clients
(73)		2.17	Work
(74)	22	2.171	Routine
(75)	9	2.172	Special
(76)		2.2	Supervisory
(77)		2.21	Control
(78)		2.22	Development
(79)		2.221	Orientation
(80)		2.222	Improvement
(81)		2.223	Re-training
(82)		2.23	Advisory
(83)		2.3	Instructional
(84)		2.31	Teaching
(85)		2.32	Curriculum
(86)	4	2.321	Development
(87)		2.322	Testing
(88)	4	2.323	Implementation
(89)	1	2.324	Modification
(90)	2	2.325	Revision
(91)	2	2.33	Extra-curriculum
(92)	3	2.34	Materials
(93)		2.35	Facilitation
(94)		2.4	Purpose Determination
(95)	1	2.41	Goals (educational)
(96)		2.42	Objectives
(97)		2.421	Operation
(98)	4	2.422	Program
(99)		2.5	Personnel
(100)	1	2.51	Organizational Staff
(101)	8	2.511	Recruitment
(102)	8	2.512	Selection
(103)	7	2.513	Assignment

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	Times Used		
(104)	1	2.514	Orientation
(105)		2.515	Development
(106)	1	2.516	Separation
(107)	3	2.52	Pupil Services
(108)		2.521	Health
(109)	2	2.5211	Physical
(110)		2.5212	Mental
(111)		2.522	Testing
(112)	4	2.523	Advisory
(113)	4	2.5231	Guidance
(114)		2.5232	Counselling
(115)	5	2.5233	Placement
(116)		2.524	Food
(117)	1	2.525	Transportation
(118)	5	2.526	Control
(119)		2.6	Record Keeping
(120)		2.61	Staff
(121)		2.611	Professional
(122)		2.612	Non-professional
(123)	1	2.62	Student
(124)		2.621	Health
(125)	3	2.622	Academic
(126)	1	2.63	Fiscal
(127)	1	2.64	Facilities
(128)		2.7	Client-Constituent Relations
(129)		2.71	Information
(130)	10	2.711	Dissemination
(131)	4	2.712	Clarification
(132)	2	2.72	Participation
(133)		2.721	Maintenance
(134)		2.722	Assistance
(135)		2.723	Developmental
(136)		2.8	Business Management
(137)	5	2.81	Financial Affairs
(138)	2	2.811	Budgeting (allocation of funds)
(139)	3	2.812	Purchasing
(140)	6	2.813	Remuneration
(141)		2.82	Physical Plant
(142)	1	2.821	Planning
(143)		2.822	Maintenance
(144)	2	2.823	Modification
(145)		2.824	Improvement
(146)		2.825	Addition
(147)	1	2.9	Negotiation
(148)		2.91	Employees
(149)	3	2.911	Professional Staff
(150)		2.912	Non-professional
(151)		2.92	Other Govt. Agencies
(152)	1	2.93	Community
(153)		2.931	At large
(154)		2.932	Groups

	Times Used		
		3.0	OUTPUT
		3.1	Productivity
(155)		3.11	Product
(156)		3.111	Information
(157)	7	3.1111	Written
(158)	51	3.1112	Oral
(159)	47	3.112	Decisions
(160)	5	3.113	Policy
(161)	3	3.1131	Formulation
(162)		3.1132	Revision
(163)		3.114	Rules and Regulations
(164)		3.1141	Formulation
(165)		3.1142	Revision
(166)	1	3.115	Resources
(167)	4	3.1151	Personnel
(168)		3.1152	Course of Study
(169)		3.1153	Facilities
(170)		3.1154	Fiscal
(171)		3.116	Planning
(172)	3	3.1161	Strategy
(173)	50	3.1162	Operational Plans
(174)		3.117	Records
(175)		3.118	Research
(176)	4	3.119	Contract
(177)		3.12	Performance
(178)		3.121	Behavior
(179)	27	3.1211	Rational
(180)	16	3.1212	Irrational
(181)	29	3.122	Decision Transmission
(182)	47	3.123	Information Transmission
(183)		3.124	Policy
(184)	2	3.1241	Enforcement
(185)	15	3.1242	Interpretation
(186)		3.125	Rules and Regulations
(187)	6	3.1251	Enforcement
(188)	5	3.1252	Interpretation
(189)	1	3.126	Arbitration
(190)	5	3.127	Consultation
(191)	8	3.128	Work
		3.2	Affectivity
(192)	41	3.21	Organization
(193)	36	3.211	Professional Staff
(194)	1	3.212	Non-professional Staff
(195)	1	3.22	Clients
(196)	37	3.221	Students
(197)	10	3.222	Parents
(198)	1	3.23	Interstitial Groups
(199)	8	3.231	Board of Education
(200)		3.232	P.T.A.
(201)		3.233	Citizen Advisory Groups
(202)	1	3.234	Other

	Times Used		
(203)		3.24	Supra-Educational Organizations
(204)	1	3.241	Intermediate (County)
(205)	2	3.242	State
(206)	1	3.243	Federal
(207)	7	3.25	Extra-Organizational
(208)	4	3.251	Parents
(209)	5	3.252	Citizens
(210)	2	3.253	Community
(211)	1	3.26	Profession
(212)	11	3.261	Individuals
(213)	2	3.262	Associations
(214)		3.263	Movements
		3.3	Feedback
(215)		3.31	Internal
(216)		3.311	Positive
(217)	50	3.3111	Ongoing
(218)	30	3.3112	Post facto
(219)		3.312	Negative
(220)	25	3.3121	Ongoing
(221)	16	3.3122	Post facto
(222)		3.32	External
(223)		3.321	Positive
(224)		3.3211	Ongoing
(225)	5	3.3212	Post facto
(226)		3.322	Negative
(227)		3.3221	Ongoing
(228)	5	3.3222	Post facto

B. Tabulation of the Use of Characteristics on Classification Worksheet II in Classifying the Subjects of this Research

1. Input:

(300) 65 Routine (Ordinary)
(301) 23 Special
(302) 2 Crisis

(303) 54 Action
(304) 32 Organization
(305) 3 Policy

2. Output:

(306) 67 Routine (Ordinary)
(307) 23 Special
(308) 0 Crisis

(309) 83 Functional
(310) 3 Dysfunctional
(311) 4 Non-functional

3. Input-Output Relationship:

(312) 88 Direct
(313) 1 Indirect
(314) 1 None

(315) 69 Unchanged
(316) 17 Adapted
(317) 4 Changed

(318) 19 Energy Increase
(319) 61 Energy Equivalence
(320) 10 Energy Loss

4. Steady State (System Life State):

(321) 78 Maintained Unchanged
(322) 11 Progressive Modification
(323) 1 Regressive Modification

(324) 72 Stable
(325) 18 Permeable

(326) 32 Responsive
(327) 40 Adaptive
(328) 18 Inflexible

5. Relationship of Functional Subsystems:

(329) 34 Close
(330) 47 Workable
(331) 9 Impeded
(332) 0 None

(333) 85 Formal
(334) 5 Informal

(335) 58 Programmed
(336) 32 Spontaneous

6. System Self-regulation:

(337) 69 Complete
(338) 17 Partial
(339) 3 Minimal
(340) 4 None

(341) 36 Fixed
(342) 53 Ad hoc
(343) 0 Accidental

(344) 4 Reflexive
(345) 75 Cognitive Immediate
(346) 10 Cognitive Delayed

7. Feedback (Information Flow):

(347) 56 Unlimited
(348) 30 Limited
(349) 4 None

(350) 79 Formal
(351) 9 Informal

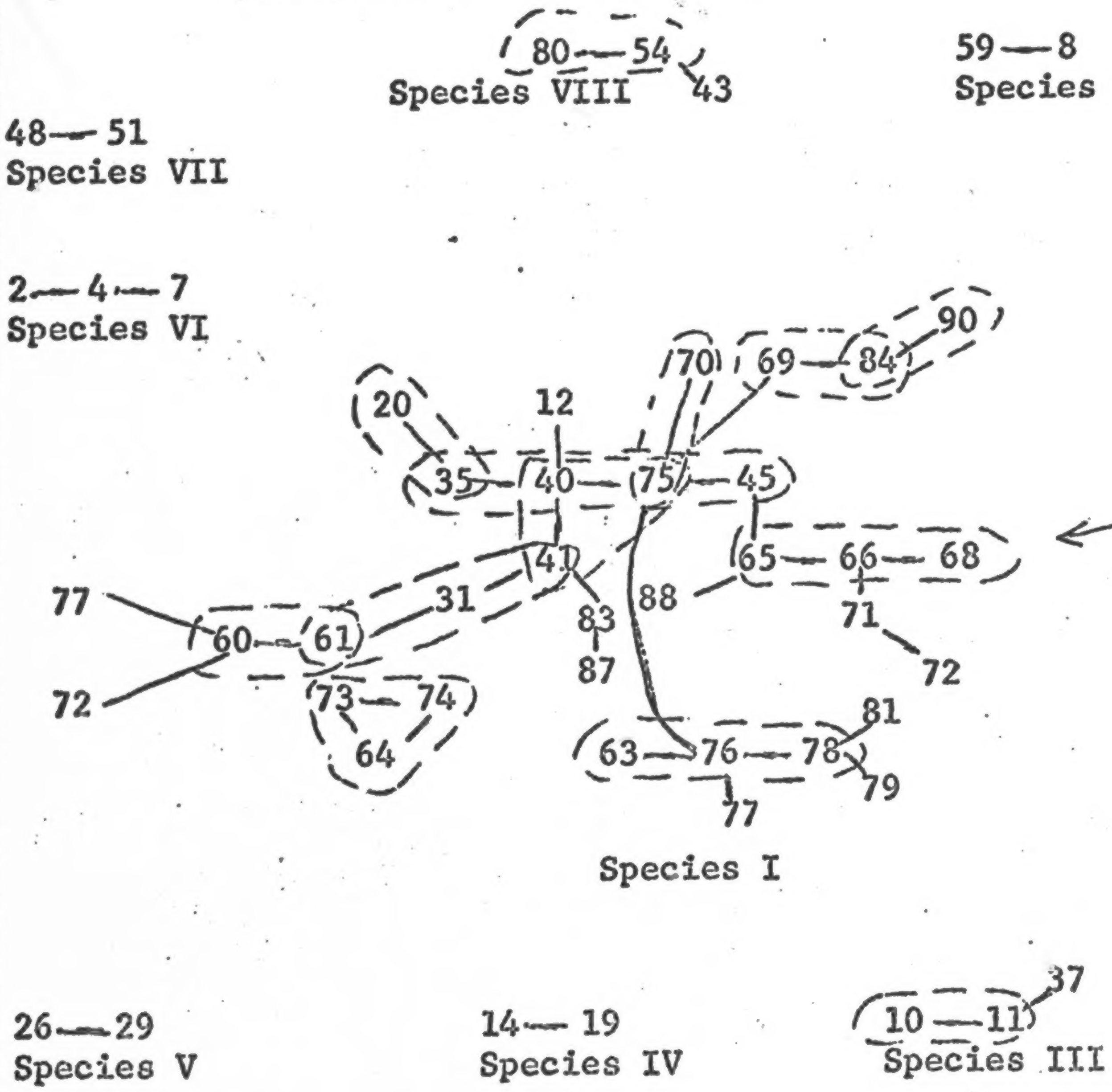
(352) 0 Intermittent
(353) 42 Continuous
(354) 29 Proportional
(355) 17 Relay

(Tendencies toward:)

	Degree of Existence				State of Tendency		
	High	Mod.	Low	None	Incr.	Same	Decr.
8. Negentropy	30 (356)	41 (360)	18 (364)	1 (368)	66 (372)	20 (376)	3 (380)
9. Progressive Segregation	0 (357)	9 (361)	9 (365)	71 (369)	8 (373)	11 (377)	0 (381)
10. Progressive Mechanization	1 (358)	26 (362)	20 (366)	43 (370)	26 (374)	20 (378)	0 (382)
11. Equilibrium	2 (359)	17 (363)	45 (367)	27 (371)	4 (375)	10 (379)	50 (383)

Chapter Addendum III

Taxonomic Groupings by Paired Relationships (Positive Overlap Only) at the 70% or Greater Levels Using Systems Classification Schemes Two and Three*
(N=50, 56% of the Behavioral Units)


80—54
43
Species VIII
59—8
Species II
48—51
Species VII
2—4—7
Species VI
20
12
70
69—84
90
35—40—75—45
41
65—66—68
71
72
77
31
83
88
60—61
87
72
73—74
64
81
63—76—78
79
77
Species I
26—29
Species V
14—19
Species IV
37
10—11
Species III

Improve Spacing to avoid curved line between 75 and 76.

Subspecies! e.g.,

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* Numbers in this figure refer to the behavioral units that were the subjects classified in this study.

VIII

SELECTED READINGS

FOR T. O. B. E.

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VII

CHAPTER [redacted]

SYNTHESIS AND CONCLUSIONS

Daniel E. Griffiths and Frank W. Lutz

The Search for a Single Taxonomy

As indicated in the title of this work, the task was to develop taxonomies of organizational behavior in education, not a single taxonomy. It was proposed that four theories be utilized in the development of the taxonomies in order to produce schemata for the classification of organizational behavior. The development and utilization of these four schemata is discussed in earlier chapters. In spite of the difficulty of synthesizing schemata developed from theories as diversified as bureaucracy, compliance, decision-making, and general systems, the research team hoped that it would be possible to demonstrate that certain parts of one schema had particular relationship to certain parts of other schema. The research team does not believe it successfully accomplished this objective. This chapter will describe what was done in an effort to meet the objective, what was accomplished and why more was impossible--at least at this point in the development of a science of administration.

Logical Analysis

It is clear that there is nothing like complete overlap on any of the four scoring schemata. In a large measure, each tends to classify different elements of the organization. Even when a word such as power is used in two schemata, i.e., in bureaucracy and compliance, the word is defined differently by the separate theories and thus defined differently in each classification schema. The resulting classification of any OTU through the use of the concept power will then be considerably different depending on the way the concept is defined in the particular theory and schema. An analysis of the classifications resulting from the use of the concept power as used in the bureaucratic and compliance schemata showed almost no overlap between the concept as used in each. That is to say, one cannot predict how power will be scored according to the compliance classification based on the way power is scored according to bureaucratic classification. To use another example, while one schema is very concerned about whether the behavior in an organization is bureaucratic or nonbureaucratic, the other schemata are not the least concerned with that fact. Because outputs of the organization may be either bureaucratic or nonbureaucratic; and because a decision to postpone may be either bureaucratic or nonbureaucratic; and because a compliant behavior directed toward some goal may be either bureaucratic or nonbureaucratic in nature, none of these areas are predictable from the data obtained by scoring the behavior along the bureaucratic-nonbureaucratic continuum. While it is not impossible that any two or three things may occur at the same time, thus producing some correlation, still the one is independent of the other.

Another area to which the research group gave considerable attention was that of the completeness of any single theory and thus of any single schema based on that theory. Granting that theories in the social sciences are incomplete, still each schema with the exception of one was able to score every OTU. That schema (the Bureaucratic Classification) omitted only one OTU which had taken place outside the boundaries of the organization, as defined by that system of classification. While it is not claimed that the data used in this study were obtained by sampling the total universe of behavior in educational organizations, they are an extensive sample of behavior in one educational organization, a public school district. In addition, the total group of OTU's includes a group of behaviors from another educational organization, higher education. These represent a different organization both institutionally, geographically and behaviorally. Each schema was complete enough to allow scoring of all of these data. Each could score all behaviors of the educational organization collected in the sample. While this fact speaks well for the individual theories upon which the schemata were built and the taxonomists who built the schemata, it creates a problem when trying to synthesize the schemata. If everything is to be classified in one schema, the other schema is not necessary for classification. In a moment it will be seen that this statement is too strong simply because while the organizational behavior may be classified according to one schema, it may be necessary to classify it according to another schema in order to fulfill another purpose of analysis. For the moment, however, the statement serves to indicate that once one can classify all units or samples according to his purpose, there is little need of using another schema.

Certain statistical processes were used in an attempt to determine whether overlaps among schemata took place. Several problems existed which rendered this attempt rather fruitless. While some theories allowed the taxonomists to indicate the degree of presence of an element, other theories only enabled taxonomists to score elements as present or absent. This created a problem of either ignoring or making tenous assumptions about other data. For instance, in some circles there is general agreement that with large samples, parametric procedures may be applied to certain scales which are not equal-interval scales. Other statisticians are still offended by this process. Inasmuch as our sample included only ninety OTU's, we were somewhat loath to call it statistically a large sample.

Further, there was a problem of the size of matrices which could be utilized even with the most modern computers and programs. To include all elements of all schemata would have necessitated a matrix of over one thousand by one thousand. To reduce the matrix by merely eliminating the finer conceptual subdivisions of the more global elements through arbitrary reduction would result in considerable (almost complete) overlap of all schemata. This was done, in fact, and the predicted result obtained. While it was possible to run a matrix as large as would have been needed to include all elements, the process was not considered feasible within the parameters of this proposal. Methods which would have required such a matrix are described in Principles of Numerical Taxonomy.[1] Such a process may prove fruitful in future research.

Having attempted some statistical techniques without success, and rejecting others as not within the scope of this project, the project team turned to the production of frequencies of overlap and a theoretical explanation where possible. When discussing the theoretical rationale for using one schema over the other, two questions will be discussed:

(1) Under what conditions may one classification schema prove more useful than another?

(2) What theoretical relationships may exist between the four schema?

As one discusses the first of these questions he really must talk about the purposes of the inquirer in wishing to select a schema for classifying organizational behavior. A simple illustration served to emphasize this point for the research team. The group had been discussing the synthesis possibilities of the schemata for a day and a half when John Hemphill picked up six objects which were on the table: a water glass; a round glass ash tray; a package of cigarettes; a paper match book; an oblong tobacco pouch; and a coffee cup. He pointed out that depending on a person's purpose, he might group these objects many ways: (1) smoking versus non-smoking objects;

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[1] Robert R. Sokal and Peter H. A. Sneath, Principles of Numerical Taxonomy (San Francisco, Calif.: W. H. Freeman and Co., 1963).

(2) round versus angular objects; (3) containers versus non-containers; (4) transparent versus non-transparent; (5) flexible versus non-flexible, etc. There seemed to be an almost infinite number of possibilities and each resulted in a different grouping which, depending on the purpose, was better than any other grouping. It became clear that no one taxonomy of organizational behavior based on present theories would be desirable even if it could be produced. Rather, what the team had before them were four ways of classifying organizational behavior, each as useful as the other and as necessary as the other, depending on the classification purposes. Perhaps some overlaps among classification schemata and relationships between theories from which the schemata were derived could be derived. Still the research team could not emerge with a single taxonomy.

Statistical Procedures for Examining Overlaps

To determine where characteristics within one schemata overlapped characteristics in any other schemata (were used the same way in scoring the theories), it was decided to compare all pairs of characteristics by using the Phi coefficient as a measure of overlap. This coefficient may be interpreted in much the same manner as a correlation coefficient (i.e., a coefficient of 1.0 describes perfect overlap.) The formula for ϕ is indicated by

Guilford as:[1]

$$\phi = \frac{AD - BC}{\sqrt{(A+B)\ (A+C)\ (D+B)\ (D+C)}}$$

When 1 = the presence of a concept and 0 = its absence and

A = the number of (1-1) combinations -- the presence of both concepts;

B = the number of (0-1) combinations -- the absence of one but the presence of the other;

C = the number of (1-0) combinations -- the presence of one but the absence of the other;

D = the number of (0-0) combinations -- the absence of both concepts

For example, if in five occurrences of a phenomenon one were to test for the overlap of two characteristics and were to find that in occurrence one and in occurrence three both were present but in occurrences two, four and five neither were present, we would have perfect overlap as Phi would be:

$$\frac{(2.3)\ (0.0)}{\sqrt{2.2.3.3}} \quad \text{or} \quad \frac{6}{\sqrt{36}}$$

Therefore: $\phi = 1.0$

There is a danger in using Phi as an indicator of overlap, however. Suppose for some reason two characteristics did not occur within the sample of specimen collected. In addition, suppose these characteristics were dissimilar and if they had appeared, they would not appear together except by chance (i.e., there was no relationship between the two). In our formula the 0-0 occurrence is the same as the 1-1 occurrence, however. For this reason any characteristic which was never scored within the sample of the ninety OTU's was dropped from the tabulation.

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[1] J.P. Guilford. Fundamentals of Statistics in Psychology and Education (New York: McGraw-Hill, 1956), p. 312.

While it is easy to see why 0-0 is the same as 1-1, it still creates problems when using Phi for our purpose. If two characteristics are actually the same, one will always be present when the other is present and if the one is not present, neither can the other be present. If every woman were a mother and every mother were a woman, then there would be perfect correspondence. Thankfully this is not the case, and while the latter produces all 1-1 occurrences, the former produces considerable 0-1 occurrences (particularly in unmarried women). Thus, the two classifications do not completely overlap. But suppose we were to test these characteristics (of mother and woman) on a sample choosing mothers only. Suppose one had an infinite sample of mothers. A spurious ϕ of 1.0 would be obtained. Merely dropping classifications which never appeared would not correct the difficulty because both classifications, woman and mother, would appear. In addition to this problem, two characteristics could have occurred together (1-1) one time in our ninety OTU's simply by chance. If both failed to appear again in the remaining eighty-nine OTU's (0-0) then the Phi would be 1.0 when it should actually perhaps be 0.0. Thus, the following rule of thumb was developed. The total occurrence of the characteristics must be at least nine (ten percent) in the ninety OTU's; the positive overlaps (1-1) must be larger than the sum of the negative overlaps (0-1) + (1-0). Only pairs of characteristics fitting this rule are reported. In addition, we report here only the overlaps between schema.

Our procedure for calculation was as follows. Numbering all characteristics one through four hundred thirty-six (having dropped those characteristics which were never used in scoring the ninety OTU's) each characteristic was recorded as present (1) or not present (0) in each of the ninety OTU's. The (1-1), (0-1), (1-0), and (0-0) occurrences were tabulated. The Phi coefficient was then calculated and pairs of characteristics were grouped into clusters of Phi equal to 1.0 to .91; .90 to .81; .80 to .71; .70. to .61; .60 to .51; and .50 to .41. These were then inspected to see if they fit the rule developed to protect against spurious conclusions regarding correspondence of characteristics. The following pairs of characteristics produced the Phi indicated while not violating the required frequencies set by the rule:

OVERLAPS OF CHARACTERISTICS BETWEEN SCHEMA

Phi	Schemata and Characteristic with	Schemata and Characteristic
.90 - .81	Compliance Productive Goal	Decision Making Central actor - authority position - board
.90 - .81	Compliance Programmed task - professional staff	General Systems Functional subsystem - personnel selection
.80 to .71	Compliance Programmed task - pupil irregulations	General Systems Output productivity - enforcement of rules and regulations
.80 to .71	Compliance Programmed task - professional staff	General Systems Output productivity - professional, individual(s)
.60 - .51	Bureaucracy High universalistic	General Systems Feedback - limited
.60 - .51	Decision Making Who carries out decision? - self	General Systems Input operation - decision making
.60 - .51	Decision Making Decision made or in process	General Systems Functional sub-system decision making
.60 - .51	Decision Making Nature of problem - personnel or staff	General Systems Output productivity - performance of work
.50 - .41	Bureaucracy High rational	General Systems Feedback - limited
.50 - .41	Bureaucracy High universalistic	General Systems System-self regulation fixed
.50 - .41	Decision Making Decision made, or procedure set or decision in process	General Systems Input - decision making

In the compliance schemata there were four characteristics which overlapped above the .70 level with characteristics from either schemata. These were higher than the overlaps discovered with any other schemata All overlaps of characteristics from the compliance schemata were above .70 and all overlaps between schemata above .70 were with characteristics from compliance. It is interesting to note that productive goals overlapped between .90 and .81 with the decision making characteristic of authority position, board. Thus, in our sample, productive goals (those goals which are related to extend or improved opportunities for pupils to prepare for vocational, family and financial problems) were highly related to the school board in an authority position to the central actor of the unit (usually the superintendent). This could be interpreted to mean that where improvement or extension of educational opportunity is involved, one must seek board approval. Further, it seems that most issues in the system studied must have centered on productive rather than intellectual goals under the major heading cultural goals. As one might expect, the classifications of programmed tasks of professional staff and pupil irregulation are related to the general systems classifications of personnel selection and enforcement of rules and regulations respectively. The characteristic professional personnel is also related to the general systems characteristic professional productivity of individual(s). These could have been predicted systematically.

Some interesting overlaps occurred with the bureaucratic schema. All those characteristics which relate to high bureaucratic operation of the organization (e.g., high rational, high specific, high universalistic) overlapped with the general systems characteristic, feedback limited. High universalistic is also related to the general systems characteristic of self regulation - fixed. At first these overlaps seemed unusual. Upon further reflection it is clear that the occurrence of overlap are predictable from bureaucratic theory. If the bureaucracy is functioning there is feedback, but this feedback is specified (fixed) and it should be limited to the amount and means specified by the bureaucratic procedure. Thus, the overlaps which occurred "fit" the theory.

One overlap with the decision-making schemata has been discussed in the paragraph on compliance overlaps. Four other overlaps of decision-making characteristics occurred, all with general systems characteristics. Again, most of these could be predicted semantically. The characteristics of self carrying out a decision is related to the functional subsystem of decision-making. When the nature of the problem is personnel or staff, the productivity output was performance of work. Finally the decision-making characteristic of decision made, or procedure set, or decision in progress, was related to the input of decision-making. In every one of these four cases the decision-making characteristic is mentioned first and the general systems characteristic second.

There were eleven characteristics of the general systems schemata which were found to overlap with other schemata. This was the largest number of overlapping characteristics in any one schema. It compares with four from the compliance, four from the bureaucracy, and five from the decision making schemata. In all cases, of course, the general systems characteristic overlapped with a characteristic from some other schema. All overlapping characteristics from general systems have been discussed previously and shall not be discussed again except to explain a possible reason why general systems has more than twice the overlaps of any other schema. There are two possible answers. First, general systems is perhaps the broadest of the four theories used in "Developing Taxonomies of Organizational Behavior in Education." And second, there were more characteristics in the general systems schemata and, therefore, greater opportunity for overlaps to occur.

It is, of course, apparent that the overlaps and the discussion of them have done little to synthesize the theories used in developing the taxonomies. Neither has one taxonomy emerged. While in one sense this is disappointing, it points to a new idea about the behavioral theories upon which the practice of administration rests. Perhaps these theories are (1) more complete, and (2) more separate than is supposed. This research would seem to point in that direction.

THE DECISION-MAKING CLASSIFICATION SCHEMA

Theoretical Base

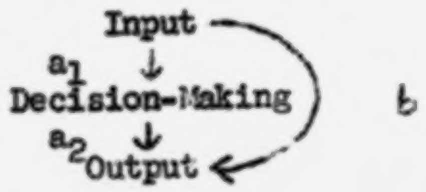
The theory upon which the decision-making schema is based was developed in a study by Griffiths, Hemphill and Frederikson during an extensive study of the elementary principalship. In that study two secondary factors related to decision-making emerged. Factor X concerned the activity of preparing for a decision vs. taking final action, and Factor Y concerned the amount of work expended in handling the item. Factor X, then, focused upon the process of making the decision and Factor Y focused upon or accounted for much of the non-decision-making behavior. Drawing heavily from these factors as well as other decisions-making concepts, a decision-making classification schema was developed. This schema, while neither mathematically nor systematically pleasing, resulted in a system of one hundred forty-two categories which established some relationships between the decision-making concepts.

The theory and the resulting classification schema are based on the following three assumptions:

1. Administration is a generalized type of behavior found in all human organizations.
2. Administration is the process of directing and controlling life in a social organization.
3. The specific function of administration is to develop and regulate the decision-making process in the most effective manner possible.

The schema and the theory that fostered it views the process of administration as the monitoring of decisions made in the organization and holds that administrative behavior can be described and understood in terms of decision-making or the monitoring of decisions in the organization.

Thus, the classification system includes one hundred forty-two characteristics arranged in an ordered relationship that is described by the following diagram:



Outputs may occur either along path a_1, a_2 (making a decision) or path b (without a decision being made). This schema accounts for the range of behaviors that must be considered in the description of administrators at work and thus the behavior of the organization.

Following classification of the ninety OTU's several types of analyses were performed, these included: frequency counts of used and unused categories, cluster formation, and content analysis of clusters. Four clusters were thus isolated and were augmented by examining scoring categories used to describe each OTU. A two level classification system resulted in which 43 OTU's were able to be classified. Thus, a new classification system was devised in which two sets of OTU's were identified as: 1) information exchanging and 2) decision-making. If one is ready to accept a set which includes 86 of the 90, then all the OTU's could be classified by the decision based theory. A set of this size was rejected as being useless for classification purposes.

Future Research

This initial taxonomy attempt opens the door to what now seems almost endless research in decision-making. Only 90 of the one hundred forty-two classification were used in classifying the OTU's of the educational organization picked for the field study. Will additional educational organizations provide behaviors that require the use of the other classifications specified in the schema? If so, what different educational aspirations, organizational structures, administrative behaviors, goals, etc., will tend to elicit these other decision-making behaviors? If not, do the decision-making behaviors occur in other types of organizations? If so, why should educational organizations not exhibit the same behaviors? Could educational organizations benefit from the adoption of decision-making patterns used in industry and vice versa? Are there cross cultural differences in decision-making patterns? What are the reasons for such differences and possible similarities? How are differences in decision-making patterns related to 1) communication, 2) organizational morale, 3) size of staff, 4) training of the chief administrator and other administrators, 5) affect on public support? The list of such questions is almost infinite. Several doctoral dissertations are presently in process in an attempt to answer such questions but the surface has hardly been scratched, much less depleted. It is hoped that the establishment of this present decision-making schema will not be viewed as the final word in decision-making taxonomy or theory but merely a new portal through which researchers may view the world of research possibilities in educational administration.

Practitioner Usefulness

It is not unusual that a large segment of schoolmen view any research project in terms of its immediate and pragmatic possibilities. At one report of this research, an old gentleman rose to ask, "I have been a principal for thirty-five years, and I would like to know how this work will enable me to do a better job in my building?" Perhaps this is a short-sighted approach to any research - but from the viewpoint of the individual administrator, it is a fair question. Research in administration has as its final, if not immediate goal, the improvement of the practice of administration. The present classification schema can provide the practicing administrator with the tool to describe the decision-making in this organization. Decisions are made at several levels of any educational organization and each has its affect on the organization as a whole. The Board of Education makes policy decisions. This process should be of prime importance to the chief school administrator. The decision-making schema will enable him to classify and thus begin to analyze this process. Certain decisions must be made by building principals. What is the nature of these decisions and how are they made? What part does the central office staff play in decision-making? Again the list could be expanded to the limits of the imagination of the practitioner. The better his grasp of the theory upon which the schema is built, the more relationships he will understand. But all from the most naive to the most sophisticated practitioner will be able to make some use of the schema.

One word of caution in conclusion. In this schema as in the other schemata, the questions raised for application may seem to some as elementary and ones to which any practical administrator has ready answers. To others the conclusions that are possible based upon such a theory will seem definite and enduring. Both observations will be ill-founded. No question about organizations is so simple that it deserves no thought. This schema is a tool for thinking or re-thinking the organizational process in terms of decision-making. What seemed self-evident will sometimes prove false. What appeared tenuous and unlikely may result in the solution to a long standing problem. On the other hand, our theory is not so well developed and our schema not so complete as to provide indisputable answers, nor should it result in unquestionable and infallible administration. It does provide a tool for analysis and a guide for action which can result in predictable ends.

The Compliance Theory Classification Schema

Theoretical Base

This compliance classification schema of organizational behavior in education is based on the theory of Amatai Etzioni which is explained in considerable detail in Chapter V. The theory defines the relationships between organizational superiors and their subordinates in terms of the power used by the superior and the response of the subordinates to that power. These determine the degree of compliance obtained including the structural and motivational aspects of that compliance.

Structural aspects of power, as defined by the theory, consider both the kinds of power used by the organization and the distribution of that power. Three kinds of power are then identified: a) coercive, b) utilitarian and c) normative. These superiors use in obtaining compliance from subordinates. The three kinds of power interact with three types of superiordinate-subordinate involvement: a) alienative, b) claculative, and c) moral. The interaction of these three kinds of power and three types of involvement produce nine contributions which are illustrated in Chart ____ on page _____.

A third classification suggested by the theory was that of organizational goals. Again, three types of goals are identified. These are: a) order, b) economic, and c) cultural. Finally, three classifications of organizational tasks: a) routine, b) instrumental and c) expressive, combine to complete the theoretical grid of classification cells. This grid which contains eighty-one cells is set forth in chart ___, page ____.

Future Research

While eighty-one cells were created by combining each of the four classifications (e.g., power, involvement, goals and tasks) it may well be that there is something less than eighty-one which empirically exist. Only twenty-seven were used in identifying the ninety samples of behavior used in this study. However, ninety are certainly too few upon which to come to the conclusion that the other fifty-four are nothing but figments of a mathematical imagination.

Other questions also remain. While this study has demonstrated the usefulness of compliance theory in building a classification scheme, we still know relatively little about the relationships between the schemata and other organizational variables. For instance, how might the power and involvement in an open educational system differ from the power and involvement in a closed system? In the ninety OTU's scored in this project, two types of behavior were dominant. These were behaviors that were O N CaR (a routine task with an order goal using normative power and obtaining calculative involvement) and E N CaR (a routine task, an economic goal, using normative power and obtaining calculative involvement). Would these patterns be found in all public school organizations or if not, what differences in the educational process obtained in educational organizations exhibit other patterns? These and other questions can be formulated by the careful reader of Chapter V. They provide a wealth of hypotheses for future research concerning educational organizations.

Practitioner Usefulness

Developments based on theory are always better used by those who understand the theory upon which the functional "thing" was based. So a physician is best able to use penicillin if he knows chemical composition and the biochemistry. Army medics have, however, saved many lives through the use of penicillin without having the theoretical knowledge possessed by the physician. So it is with the practitioner of educational administration. Operating in the field, he must have the tools to "treat" the organization, least it die. The compliance schema provides one such diagnostic tool where by particular problems may be identified before the "patient" is critically "ill."

The interpersonal relationships between superordinates and subordinates has long been recognized as a critical element in the organization. The time honored, even if rather shop worn, concept of morale contemplates a total process whose elements are, at least in the past, described by the compliance schema. Thus, this schema makes the concept of organizational morale, about which the practitioner has for many years been concerned, a more practical and manageable matter. If the practitioner classifies particular units of behavior exhibited by certain superordinates and finds them to use coercive power consistently and that the involvement of subordinates is alienated, he has a good lead as to where the chief administrator must begin in order to improve morale. True, on an initiative basis the talented practitioner always "knew" this. But this schema provides him with an objective method of determining the situation. Another interesting aspect of this is that confronted by objective evidence (e.g., scores on his own organizational behavior), the superordinate who was exhibiting coercive power in instances where other power would have sufficed may voluntarily and even eagerly modify his behavior. There are only a few men who want to be despots but many are unaware of their behavior and reluctant to modify it based on another's subjective judgments. After all, their action is as good as another's and the despot does not think of himself as such. The ability to present more objective data may prove helpful to the organization.

The above discussion is but one example of how the compliance schema should prove useful. Many other examples present themselves to the imaginative mind. The three listed below should prove interesting to administrator and board member alike.

1. Do particular tasks present themselves in the total organizational behavior more often than the chief administrator had imagined?
2. If the mission of public education is largely cultural, are cultural goals more evident than the other goals in the schema?

3. How does the school board operate in terms of power, goals, and tasks? Is a modification called for?

A practitioner might well spend time answering such questions and the compliance schema will prove a helpful tool.

The Bureaucratic Classification Schema

Theoretical Base

In Chapter VI a taxonomical schema for classifying the bureacratic behavior of men in modern organizations was presented. The schema is a tri-dimensional theoretical conceptualization based primarily on the works of three behavioral scientists: Max Weber, Robert Merton and Talcott Parsons.

Weber employed ideal type constructs to account for the structural aspects of bureaucratic organizations. He saw behavior in these modern organizations as rational in which the members engaged in activities that are coordinated toward specific goals which organizations seek to accomplish.

Robert Merton emphasized the importance and the utility of Weber's ideal type constructs. However, his chief concern was with the functional and disfunctional aspects of bureaucratic organizations, i.e., the unanticipated consequences of rational or nonrational behavior.

Talcott Parsons conceptualized modern organizations as social systems, i.e., the nature of the relationships between individuals (actors) in organizations. He saw these relationships as interactions occurring within a framework of superordination-subordination whose affectivity (feelings) could be characterized as particularistic or universalistic.

The works of these three social scientists provided the theoretical foundation for constructing a "theoretical model" for classifying and observing bureaucratic behavior in complex modern organizations. In addition, the tri-dimensional theoretical model is based on a strategy outlined by Arthur P. Coladarci and Jacob W. Getzels for observing and analyzing administrative behavior in educational organizations. The model deals with (1) the goal direction (structural) of the behavior; (2) the role parameters (functional) of the behavior; and (3) the affectivity (inter-personal character) of the behavior of administrative personnel as they engage in activities of the organization.

The model has been applied to data collected in the field study described elsewhere in this volume. Thus, it was possible to determine the utility of the theoretical schema in terms of how well it would account for behavior in educational organizations and whether one could classify bureaucratic behavior in such organizations. Eight classes of bureaucratic behavior emerged from the application. These classes represent distinct categories of behavior that can be observed in educational organizations and are specified earlier in Chapter VI.

"Pieces" of bureaucratic behavior were observed and classified from ninety OTU's from field study data. While the classifications generated from the model must be conceived as theoretical entities, nevertheless it becomes clear that these concepts can be utilized for operational purposes. They can also be viewed in terms of categoric logic to which quantitative measures and statistical concepts can be applied. However, up to this point only elementary and somewhat primitive measures have been established. A more refined and definite statistical approach is indicated from this initial taxonomic exercise.

Future Research

Educational researchers who wish to classify, observe and analyze behavior of personnel in school organizations will find this tri-dimensional theoretical schema particularly useful. Several doctoral dissertations that employ the schema are presently in process. By employing the schema, one is able not only to observe the relationship between variables as employed in the theoretical framework, but to present them graphically and in measurable terms. The researcher can also examine microscopically "slices" of bureaucratic behavior within the organization under observation. While these microscopic pictures cannot be comprehended in and of themselves, they can be inspected macroscopically for the patterns of relations they may have with others. Moreover, the distribution and magnitude of bureaucratic behavior can be shown graphically as they occur in complex organizations. Such graphs provide the research analyst with "stop action" pictures of the behavior observed and classified in the organization. In addition, such pictures present clues and insights for more intensive inspection of the educational organization.

Perhaps the overall utility of this theoretical strategy for studying bureaucratic behavior of organizations is that it establishes important empirical baselines for deriving researchable hypotheses for testing relationships between and among variables that affect the equilibrium of educational organizations. This schema points the direction of fruitful research in this area during the next decade.

Practitioner Usefulness

Many school administrators will raise questions concerning the practical value of this relatively new thrust in educational research. Some of the practical uses of a bureaucratic taxonomy in the administration of school organizations may be suggestive by a few categorical statements:

1. The schema places the school executive in a better position to raise the "right" questions concerning his school organization. Thus,-a taxonomy may be used as an initial diognostic instrument.
2. The school executive who is concerned with the maintenance of this organization will become more knowledgeable about where to look for information.
3. He will also be able to examine the decision-making process in his organization and learn what and where to look for the outcome of decisions in terms of the organization's bureaucratic structure.

The Systems Theory Classification Shema

Theoretical Base

The theoretical base for the systems approach to building the taxonomy or systems classification schema presented in this work is taken from theories of "open" systems. Open systems are those systems which exchange energy and matter with their environment. By virtue of their ability to interact with their environment, such systems exist in a dynamic life state characterized by order, differentiation, variation, and increasing complexity. That schools or educational organizations are open systems is obvious; theories of open systems, thus, have clear relevance for studying and analyzing organizational behavior in education.

When examining the theories of open systems it is apparent that no single general or all-inclusive theory of open systems exists. Although based on commonly shared assumptions and propositions, current theories describe and dimensionalize open systems in a variety of ways. As noted earlier in Chapter VII, open systems can be viewed as generic "wholes," in terms of the processing of inputs into outputs, in terms of the universal states and processes of all open systems, and in terms of the outcomes of system activity.

As a result of the differing emphasis noted in open system theories, a multi-scheme approach for taxonomic research was developed in this research project. Four discrete classification schemes were constructed and used in the study. The schemata and an indication of their theoretical antecedents can be tersely reviewed as follows:

1. Classification Approach I: Comprehensive Systems Characterization Schema--This schema was derived from "systems theories of the whole" or comprehensive systems theories. These theories focus generally and often subjectively on total or "whole" systems and their components, the components' attributes, and the relationships between the components and their attributes.
2. Classification Approach II: Input-Output Linkage (Subsystems) Schema--This schema was derived from "process" or subsystem theories. Theories of this type are concerned with microscopic analysis and focus on the processing of inputs through system subsystems into output.
3. Classification Approach III: Analysis of System Properties: States and Processes--This schema was derived from theories of the universal properties of open systems. Such theories represent macroscopic analysis and are based upon the recurring properties and states evinced in the life-space of a wide variety of systems.
4. Classification Approach IV: Output Analysis Schema--

> This schema was derived from output theories or system output or outcome analysis. Theories of this type focus on the products or outcomes of system activity relative to their impact on the system and/or its environment.

These classification schemata represent four different ways of looking at the educational organization. Together they permit a detailed and comprehensive picture. Individually they provide specific kinds of views of organizational behavior in terms of specific purposes identified above. Thus, the classification approaches or schemata have a potential for application in total, or individually in terms of particular purposes under consideration.

The research utility of the systems schemata has already been dealt with in some detail in Chapter VI. The systems schemata also have a potential as a framework for organizational analysis. In the latter vein these schemata can be used to assess various aspects and levels of behavior either within the organization or emitted by the organization. The potential for analysis extends from the assessment of particular events (e.g., a meeting of the administrative cabinet) or situations of long-term periods of organizational activity (e.g., the preparation and passage of a budget.) They can be used either for purely descriptive or for clinical and/or diagnostic purposes. Although the schemata are not panaceas as analytic vehicles and do, for proper application, require more than a layman's conception of "systems," individually and collectively they can be viable devices for assessing organizational behavior in education for the less theoretically trained.

Future Research

Not only are there extensive possibilities for taxonomic research into organizational behavior in education using the systems schemata, but also there are already a number of emerging leads for basic descriptive and experimental research as well. Certainly from the limited application of the schemata to date, a number of cogent questions and testable hypotheses have been generated. Additionally, it is hoped that the theoretician will likewise be able to unearth relationships, linkages, and dynamics in and through the application of the schemata.

Practitioner Usefulness

The value of the systems theory schemata is not, however, limited to the more scholarly aspects of the study of organizational behavior in education. The schemata can well be used in an on-the-job analysis and assessment of organizational activity. Here, whether in the hands of the external organizational consultant or interested members of an organization, they can serve a variety of purposes. In general, they can be used to describe the actions and behavior of organizations or organization members to provide a framework for action research or developmental programs and to function as a conceptual base for the clinical analysis of an organization, including its components, processes, and procedures.

Systems schema one, (the comprehensive systems characterization scheme), permits a description of a behavioral event (e.g. **an occurrence,** a decision situation, or a meeting) in terms of its salient features. Through the identification and description of inputs according to this schema, what is being acted upon becomes apparent. The identification of actors, organizational mechanisms, and organizational subsystems shows how that which is being acted upon is processed by the organization. By identifying the locus of forces involved, an accurate assessment of the organization-environmental dynamic is revealed. And, finally, in recording the output or outcomes, end products of action are delimited. This scheme enables an observer to record in a systems framework on a single sheet of paper the essential aspects of a behavioral situation that may in all of its complexity and detail be of much greater length. Analysis by such a procedure forces the analyst (a) to look at specific units of behavior in their entirety rather than at sequences of more or less related behaviors many of which are not resolved or relevant, and (b) to look at the key aspects of systems activity: inputs, process, and output.

The second systems schema, (the input-output linkage schema), provides a framework for the microscopic assessment of organizational behavior. By checking the presence or absence of each of the detailed characteristics (essentially a "go," "no-go" procedure), a number of relevant questions about an organization's processing of work can be answered. Through the use of this schema, questions such as the following can be focused upon: (1) What resources are used in processing work in educational organization? (2) How are resources used in processing work in educational organizations? (3) How is work processed in the educational organization? (4) What subsystems process the most and/or the least work in educational organizations? (5) What are the outputs (outcomes of work done) of educational organizations? (6) To what extent are people or specific groups involved in educational organizational work? (7) What are the patterns of action in doing work in an educational organization? Although this schema can be used to analyze a single event or situation, it is expected that a "log" of such analyses over time will be even more revealing. For example, in our analyses of the classifications made in this study we found certain patterns were revealed when we totaled the use of each characteristic in terms of the total sample of behaviors. Illustrative are the following conclusions that resulted from our data analysis: (1) Individuals tended to process organizational work rather than groups. (2) Most organizational work in our sample was processed through the administrative subsystem regardless of whether or not another subsystem, such as the personnel or supervisory subsystems, was more appropriate. (3) Greater concern for product output than for affectivity or feedback output was indicated. Such generalizations based upon systematic, recorded observations permit a more valid assessment of an educational organization than do random and/or subjective observations.

Use of the third systems schema, (the analysis of system properties states and processes schema), in analyzing organizational behavior in education can provide several kinds of information for the organizational analyst or practitioner. First, this scheme can be used to indicate organizational "openness." To illustrate, the more special and unique inputs are processed, the higher the level of negentrophy and the lower the level of equilibrium, as these are defined in Chapter VII, the more "open" is the organization. Also, through this macroscopic scheme, the bureacracy of an organization can be revealed. Obviously organizations that use formal and fixed arrangements and exhibit high degrees of increasing progressive mechanization are more bureaucratic than those not so prone. This schema is further helpful in assessing the kinds of work processed in an educational organization, the internal dynamics of organizational systems (e.g., relationship of subsystems, or the nature of feedback mechanisms), and the extent of ordering or differentiation in system action. It should be noted that this schema can be applied equally well to behavioral units ranging from single events to case studies or histories of several years of organizational activity.

The final systems schema, (output analysis), may well have the most import for on-the-job organizational analysis. This scheme reveals the multi-dimensionality of organizational output and forces one to assess organizational outcomes as more than productivity (in terms of a full range of possible consequences). Although somewhat subjective, this scheme is the most readily used of the four systems schemata by the non-systems oriented practitioner. The schema has been operationalized to the extent it can be easily applied to the organizational context. Also, its profile scale presents a graphic picture of output. The comparability of several such profiles has distinct advantages. In assessing an educational organization using this device, preoccupation with certain categories of output (e.g., products) and lack of attention to others (e.g., identity sense) are revealed. Since over or under attention to certain kinds of output may be highly dysfunctional, it behooves those in an organization to carefully and systematically assess such outcomes. This kind of analysis is a check on process or microscopic analysis, and, though subjective, is a step to a qualitative assessment of organizational activity.

Summary

That this project did not develop a single taxonomy of organizational behavior in education is evident to even the casual reader.

It did,however, accomplish the objectives stated in the original proposal. Taking those objectives in the order listed in chapter one, each was met as explained below.

1. To define more clearly the conceptual boundaries of organizational behavior in education and to give more precise definition to areas of knowledge which fall within these boundaries.

Four theories which might be described as areas of knowledge, were selected from which classification schemata were developed. The concepts outlined in the theories were identified and extended. The resulting concepts were defined so that classifications of organizational behavior can now be made through the schema based on four theories. Thus, the boundaries of the theories were on the one hand more clearly defined and on the other hand extended.

2. To provide useful guide lines for selecting and abstracting content on educational administration which may be used for laying a sound base of information retrieval systems which undoubtedly will be developed within the next decade.

Each of the four classification systems provides a base from which abstracting content in educational administration can proceed. Retrieval systems can be built upon these classification systems directing students and scholars in educational administration to information concerning decision-making, interpersonal relationships, bureaucratic behavior and the general system properties of educational organizations.

3. To furnish guides for use in developing instructional materials to prepare administrators.

Beside the value of classifying and retrieving infomation, the taxonomies point out areas where instructional materials are presently lacking. In addition, the organizational taxonomic units themselves should prove a useful instructional aid in the preparation of educational administrators.

4. To encourage and provide guides for use in synthesizing knowledge on educational administration.

The synthesis attempt among theories was not as successfully met as were some of the other objectives of this study. The study team was unable to provide a synthesis of the four theories. Perhaps this in itself may be a guide for a new emphasis with regard to synthesis. Additional research may corroborate the finding that present theories in educational administration are more distinct and more complete than some authors have previously proposed.

5. To identify areas of educational administration where there is meager research and areas where additional inquiry is badly needed.

Each theory was expanded through the process of schema development and final OTU classification. This aspect of the research is described in the separate chapters. Also, new areas of research in educational administration have been opened through the development of each classification schema.

6. To develop and evaluate methods of taxonomic inquiry which should usefully facilitate further inquiry.

The methods used in the development of this research and the evaluation of the results of these methods are carefully explained in chapters two and eight. These procedures and the experience of this research team should prove to be useful to others who wish to continue to develop taxonomic inquiry in educational organizations.

This chapter has attempted to set forth the procedures carried out by the research team in an effort to move toward the development of taxonomies of organizational behavior in education. The small and simple "fits" discovered have been indicated and explained. The possible reasons for not being able to go beyond the original task of building taxonomies to the greater task of synthesizing into a single taxonomy have been presented. This chapter has summarized the theory, implications for future research, and pragmatic usefulness (with particular exphasis on the practitioner) of each schema.

While the schemata provide useful tools for the practitioner of educational organizations (and perhaps administrators of other kinds of organizations as well), of particular interest to the authors are the opportunities for future research generated by the study. The students of educational administration have been directed to a vast uncharted area on the map of organizational theory. To the "explorer" of knowledge this should provide an interesting challenge. The vastness of this area testifies to the infancy of this area of taxonomy of organizations which has begun here.